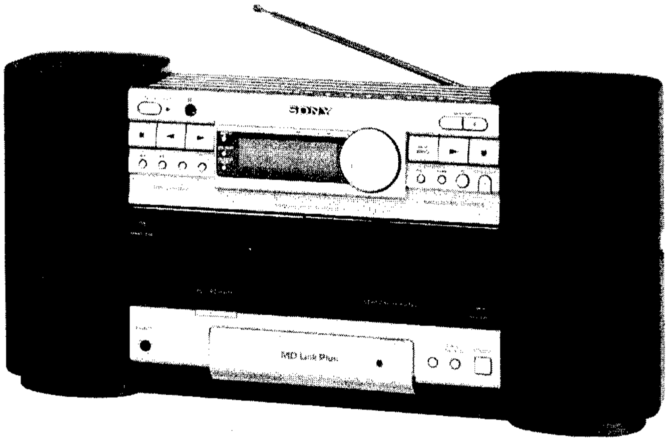
ZS-D7

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model



CD Section	Model Name Using Similar Mechanism	NEW
	Base Unit Type	VLM-ZSD7-142
	Optical Pick-up Type	CDM-2411AAA
Tape Section	Model Name Using Similar Mechanism	PMC-D305/D305L
	Tape Transport Mechanism Type	MF-D7-145

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 4 ohm loads, both channels driven fro100 - 10,000 Hz; rated 7W per channel-minimum RMS power, with no more than 10 % total harmonic distortion in AC operation.

Other Specifications

CD player section

System
  Compact disc digital audio system

Laser diode properties

Material:	GaAlAs
Wave lengh:	780nm
Emission duration:	Continuous
Laser output :	Less than 44.6μW (This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Spindle speed	200 r/min (rpm) to 500 r/min(rpm)(CLV)
Number of channels	2
Frequency response	20 – 20,000 Hz + 0.5/– 2 dB
Wow and flutter	Below measurable limit

Radio section

Frequency range

US, Canadian	FM: 87.6 - 108 Hz AM: 530 - 1,710 kHz
AEP, UK	FM: 87.6 - 107 MHz MW: 531 - 1,602 MHz LW: 153 - 279 kHz
Aerials	FM: Telescopic aerial AM: Built-inferrite bar aerial

Cassette-corder section

Recording system	: 4-track 2 channel stereo
Fast winding time	: Approx. 130s (sec.) with Sony casette C-60
Frequency response	: TYPE 1 (normal) : 100 - 10,000 Hz

General

Speaker
  Full range: 5 cm (2 in.) dia, 8 Ω, cone type x 4
Control
  MD CONTROL jack
Input
  LINE IN jack (stereo minijack)
    Minimum input level 250 mV
Outputs
  Headphones jack (stereo minijack)
    For 16 - 68 Ω impedance headphones
  DC OUT (6 V 800 mA MAX) jack
  LINE OUT jack (stereo minijack)
    Rated output level 250mV at load impedance 47 kΩ
  OPTICAL DIGITAL OUT (CD) jack (optical output connector)
    Wavelength: 630 - 690 nm
Power output (excluding US model)
  10 W + 10 W (at 4 Ω, 10 % harmonic destortion)

Power requirements

For personal audio system:	120 V AC, 60 Hz 12V DC, 8 size D (R 20)batteries
For memory back-up:	6 V DC , 4 size AA (R6) batteries
For remote commander:	3 V DC, 2 size AA (R6) batteries
Power consumption	AC 38 W

— Continued on next page —

PERSONAL AUDIO SYSTEM

MICROFILM

TABLE OF CONTENTS

1. SERVICE NOTES 3

2. GENERAL 4

3. DISASSEMBLY

3-1. Cabinet (Rear) Assy 12
3-2. Main Board, Radio Board 13
3-3. CD Tray Assy (VLM-ZSD7-142) 14
3-4. Mechanism Assy (FM-D7-145) 14
3-5. Control Board, MD Regulator Board 15
3-6. Jack Board, H/P Board, MD Jack Board, DC Out Board 15
3-7. Diode Board, AC Inlet Board, EXT ANT Board, Relay Board 16
3-8. Loading Board 16
3-9. Loading Chassis Assy, Drive Assy 17
3-10. CD Tray Assy, Relay Board 17

4. TEST MODE 18

5. MECHANICAL ADJUSTMENT 18

6. ELECTICAL ADJUSTMENT 19

7. DIAGRAMS

7-1. Circuit Board Location 22
7-2. Block Diagram – Main Section – 23
7-3. Block Diagram – Tuner/CD Section – 26
7-4. Printed Wiring Board – Diode Section – 29
7-5. Schematic Diagram – Diode Section – 32
7-6. Printed Wiring Board – Main Section – 34
7-7. Schematic Diagram – Main Section (1/4) – 39
7-8. Schematic Diagram – Main Section (2/4) – 42
7-9. Schematic Diagram – Main Section (3/4) – 45
7-10. Schematic Diagram – Main Section (4/4) – 48
7-11. Printed Wiring Board – Jack/DC Section – 51
7-12. Schematic Diagram – Jack/DC Section – 54
7-13. Printed Wiring Board – Control Section – 55
7-14. Schematic Diagram – Control Section – 59
7-15. Printed Wiring Board – Tuner Section – 62
7-16. Schematic Diagram – Tuner Section (US/CND) – 65
7-17. Schematic Diagram – Tuner Section (AEP) – 68
7-18. IC Pin Function Description 71
7-19. IC Block Diagrams 72

8. EXPLODED VIEWS

8-1. Cabinet (Front) Section 76
8-2. Cabinet (Rear) Section 1 77
8-3. Cabinet (Rear) Section 2 78
8-4. CD Chassis Section 1 (VLM-ZSD7-142) 79
8-5. CD Chassis Section 2 (VLM-ZSD7-142) 80
8-6. Optical Pick-up Section (CDM-2411AAA) 81
8-7. Mechanism Deck Setion 1 (MF-D7-145) 82
8-8. Mechanism Deck Setion 2 (MF-D7-145) 83

9. ELECTRICAL PARTS LIST 84

Battery life
For personal audio system
FM recording
Sony R20P: approx. 3.5 h
Sony alkaline LR20: approx. 10h
Tape playback
Sony R20P: approx. 1h
Sony alkaline LR20: approx. 2.5h
CD playback
Sony R20P: approx. 1h
Sony alkaline LR20: approx. 2h

Dimensions (incl. projicting parts)
Approx. 482 x 238 x 125 mm (w/h/d)
(19 x 5 x 5 inches)

Mass (incl. batteries) Approx. 5.2 kg (11 lb. 7 oz)

Supplied accessories
AC power cord (1)
MD connecting cord (1)
Remote commander (1)

Design and specifications are subject to change without notice.

Optional accessories
Sony MDR headphone series

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

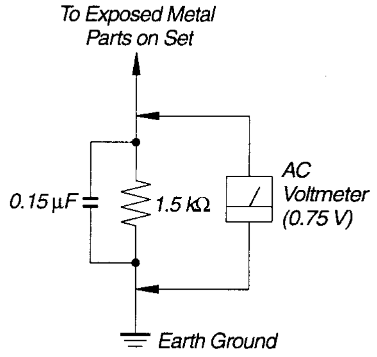


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.

CAUTION	;	INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL	;	USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO!	;	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING	;	LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÄD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL	;	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SECTION 1
SERVICE NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

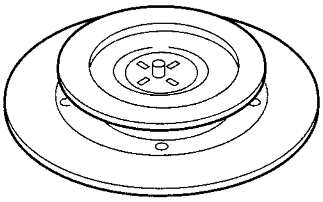
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

CHUCK PLATE JIG ON REPEARING

On repairing CD section, playing a disc without the CD lid, use Check Plate Jig.
- Code number of Chuck Plate Jig : X-4918-225-1

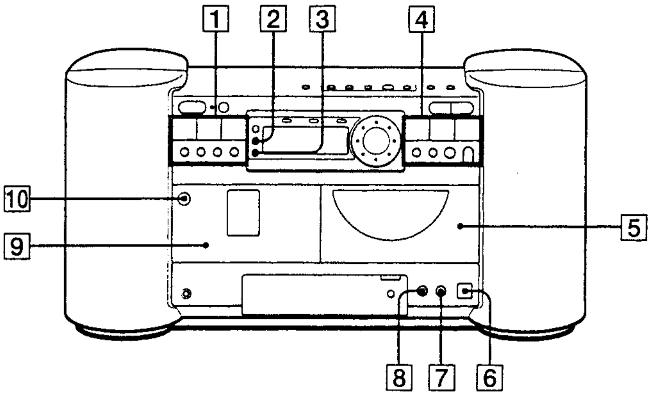


SECTION 2
GENERAL

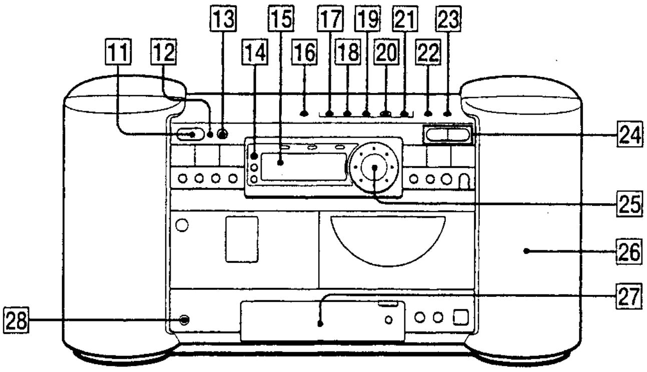
This section is extracted from instruction manual.

LOCATION OF CONTROLS

FRONT SIDE

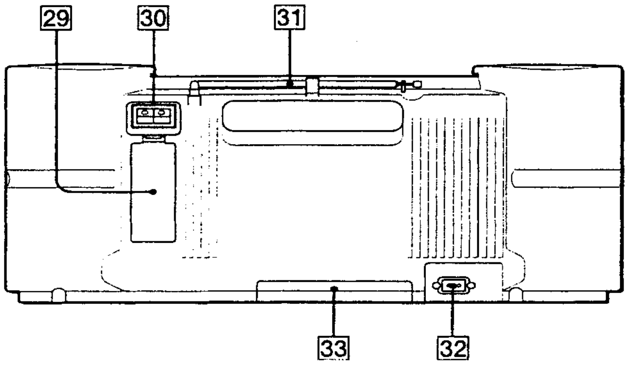


1 TAPE CONTROL button
2 DIR MODE button
3 COUNTER RESET button
4 RADIO/CD/MD CONTROL button
5 CD TRAY
6 MD (LINE) button
7 CONTROL MD → CD button
8 DUB START CD → MD button
9 CASSETTE LID
10 PUSH OPEN/CLOSE button



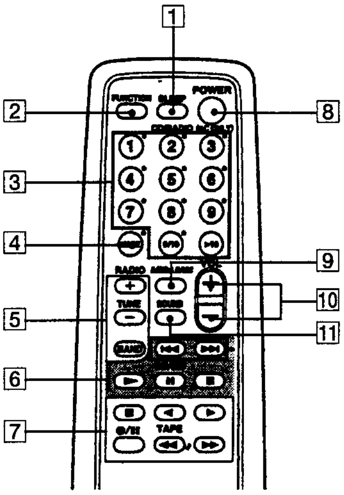
11 POWER button
12 OPR/BATT lamp
13 Remote Sensor
14 DISPLAY button
15 Display
16 STANDBY button
17 CLOCK button
18 TIMER/SLEEP button
19 MENU button
20 ENTER button
21 CANCEL button
22 SOUND button
23 MEGA BASS button
24 VOLUME button
25 JOG DIAL
26 Speaker
27 INPUT/OUTPUT
28 PHONES JACK

REAR SIDE


29
30
31
33
32

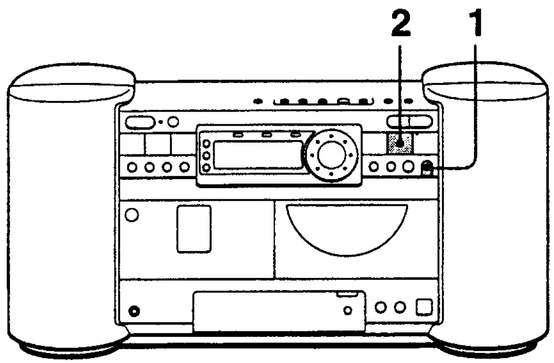
29 Memory battery compartment
30 FM EXT ANT terminal
31 FM/TV lod antenna
32 AC IN JACK
33 Main battery compartment

Remote commander (RMT-CD7AD) (AEP, UK) (RMT-CD7A) (US, CND)


1
2
8
3
4
9
10
5
11
6
7
FUNCTION
SLEEP
POWER
RADIO
TUNE
BAND
TAPE

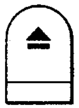
1 SLEEP button
2 FUNCTION button
3 Number button
4 MODE button
5 RADIO button
6 CD/MD button
7 TAPE button
8 POWER button (AC only)
9 MEGA BASS button
10 VOLUME +/– button
11 SOUND button

Playing a CD

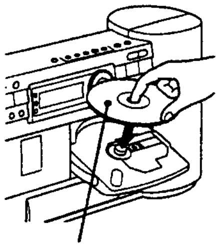


Connect the supplied AC power cord (see page 39.)

1 **OPEN/CLOSE**



Press ≜ OPEN/CLOSE (direct power-on) and place the CD on the CD tray until it clicks into place.

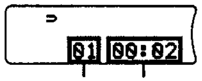

With the label side up

2

Press ►

The CD tray closes and the player plays all the tracks once.

Display

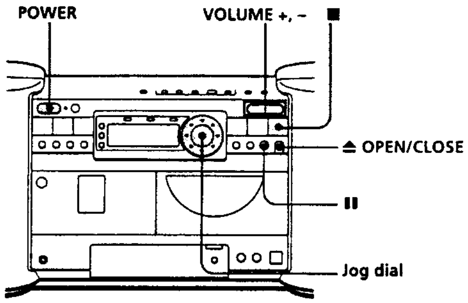


Track number Playing time

Tips

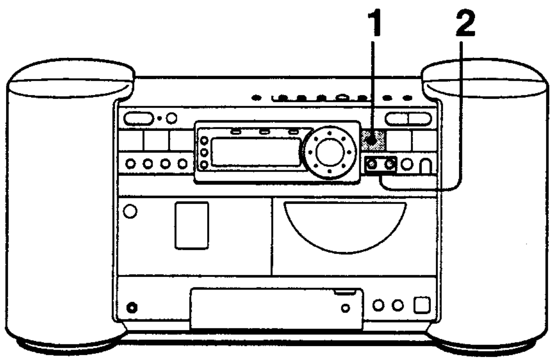
- After inserting the CD, "TOC READING···" appears in the display and the player starts to read the total number of tracks on the CD and the time information on the CD.
- Next time you want to listen to a CD, just press ►. The player turns on automatically and starts playing the CD.

Use these buttons for additional operations



To	Do this
Adjust the volume	Press VOLUME +, - (VOL +, - on the remote).
Stop playback	Press ■.
Pause playback	Press II. Press again to resume play after pause.
Go to the next track	Turn the jog dial clockwise. (On the remote, press ►►I.)
Go back to the previous track	Turn the jog dial counterclockwise. (On the remote, press I◄◄.)
Remove the CD	Press ≜ OPEN/CLOSE.
Turn on/off the player	Press POWER.

Listening to the radio

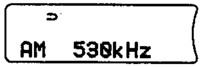


Connect the supplied AC power cord (see page 39.)

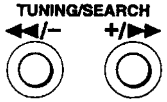
1

Press BAND until the band you want appears in the display (direct power-on).

Display



2

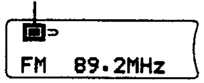


Hold down TUNING/SEARCH +/▶▶ or ◀◀/– (TUNE + or – on the remote) until the frequency digits begin to change in the display.

The player automatically scans the radio frequencies and stops when it finds a clear station.

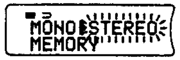
If you can't tune in a station, press TUNING/SEARCH +/▶▶ or ◀◀/– (TUNE + or – on the remote) repeatedly until you tune in the station you want.

Indicates an FM stereo broadcast.



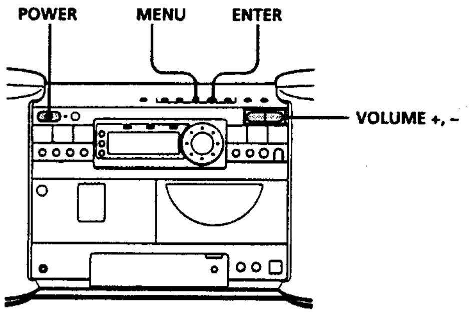
Tips

- If the FM broadcast is noisy:
  On the remote:
  Press MODE until "MONO" appears in the display and the radio will play in monaural.
  On the player:
  1 Press MENU.



  2 Turn the jog dial until "MONO" flashes in the display and press ENTER.
  The radio will play in monaural.
- Next time you want to listen to the radio, just press the BAND button. The player turns on automatically and starts playing the previous station.

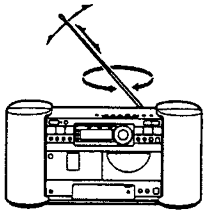
Use these buttons for additional operations



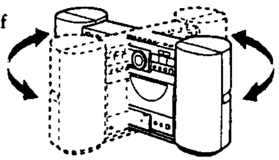
To	Press
Adjust the volume	VOLUME +,– (VOL +, – on the remote)
Turn on/off the radio	POWER

To improve broadcast reception

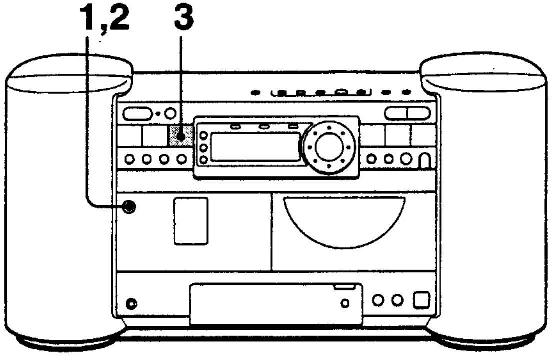
FM:
Reorient the antenna for FM.



AM:
Reorient the player itself for AM.

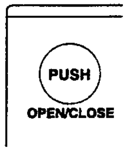


Playing a tape

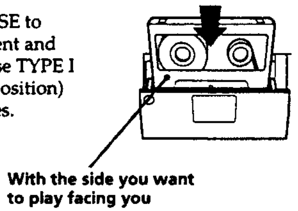


Connect the supplied AC power cord (see page 39.)

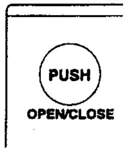
1


PUSH
OPEN/CLOSE

Press PUSH OPEN/CLOSE to open the tape compartment and insert a recorded tape. Use TYPE I (normal), TYPE II (high position) and TYPE IV (metal) tapes.

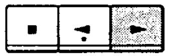

With the side you want
to play facing you

2


PUSH
OPEN/CLOSE

Press PUSH OPEN/CLOSE to close the compartment.

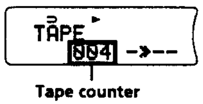
3



Press ►.
(On the remote, press TAPE ►.)

The player turns on (direct power-on) and starts playing.

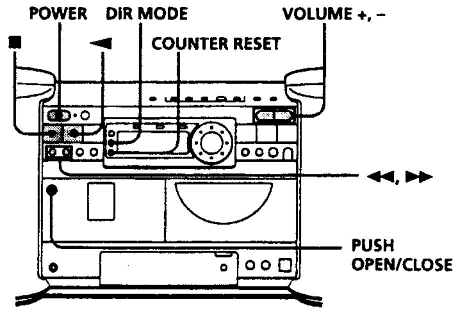
Display


TAPE
004
-»--
Tape counter

Tips

- Press COUNTER RESET to reset the counter to "000."
- Next time you want to listen to a tape, just press ► or ◄. The player turns on automatically and starts playing the tape.

Use these buttons for additional operations


POWER
DIR MODE
VOLUME +, –
■
◄
COUNTER RESET
◄◄, ►►
PUSH
OPEN/CLOSE

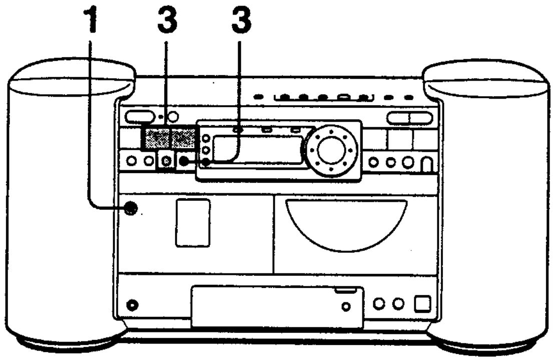
To	Press
Adjust the volume	VOLUME +, – (VOL +, – on the remote)
Stop playback	■
Play the reverse side	◄
Fast-forward or rewind the tape	►► or ◄◄
Eject the cassette	PUSH OPEN/CLOSE
Turn on/off the player	POWER

To select the direction of the tape

Press DIR MODE repeatedly.

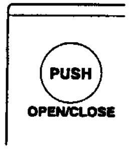
To play	Display shows
One side of the tape	⇄
Both sides of the tape from the front side to reverse side only	⊃
Both sides of the tape repeatedly	⟳

Recording on a tape

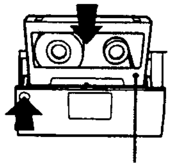


Connect the supplied AC power cord (see page 39.)
To record on a MiniDisc or DAT recorder, connect the components (see pages 41 and 45.)

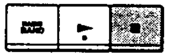
1



Press PUSH OPEN/CLOSE to open the tape compartment, and insert a blank tape. Use TYPE I (normal) tape only.
Press PUSH OPEN/CLOSE again to close the compartment.


With the side you want to record on facing you

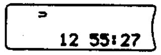
2



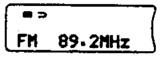
Select the program source you want to record.

To record from the CD player, insert a CD (see page 4) and press ■ on the CD section.

Display

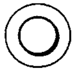


To record from the radio, press BAND and tune in the station you want (see page 6.)



3

DUB START
CD→TAPE



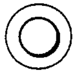
Start recording.

To record the whole CD
Press DUB START CD → TAPE.

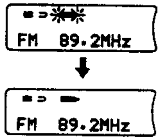
CD → TAPE
01 00:02

When ⊐ is displayed:
If the tape is reversed with the recording of the track unfinished, the player will record the track again from its beginning on the reverse side.

●/II



To record the radio
(You can also record the CD according to the following procedure. Play the CD after the tape starts recording.)
Press ●/II and then ►.
To record on the reverse side, press ◄.
(On the remote, while keeping ●/II pressed, press TAPE ► or ◄.)



Note
On the player, press ► within 8 seconds after ●/II is pressed.

continued

Recording on a tape (continued)

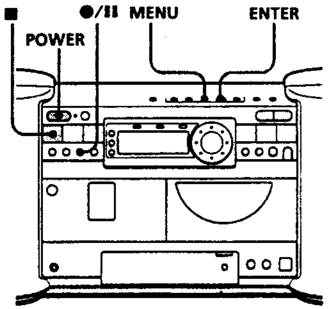
Tips

- Adjusting the volume or the audio emphasis (see page 48) will not affect the recording level.
- When ⟳ is displayed, recording will be made on both sides of the tape. To record on one side, press DIR MODE to display ⇄.
- If the AM radio makes a whistling sound after you've pressed ●/❚❚ in step 3, press MODE on the remote repeatedly to select the position that most decreases the noise.
  On the player, use MENU to select "ISS"

Note

When you start recording using DUB START CD → TAPE, you cannot set the player in pause.

Use these buttons for additional operations



To	Press
Stop recording	■
Pause recording	●/❚❚ Press the button again to resume recording.
Turn on/off the player	POWER

To erase a recording

1 Insert a tape you want to erase its recording into tape compartment and press ■.

2 On the player: press ●/❚❚ and then ▶.
On the remote: While keeping ●/❚❚ pressed, press ▶ on the tape section.

Troubleshooting

	Symptom	Remedy
General	There is no audio.	• Press POWER to turn on the player. • Connect the AC power cord to the AC IN socket and a wall outlet securely. • Make sure the batteries are inserted correctly. • Replace all the batteries with new ones if they are weak. • Adjust the volume. • Unplug the headphones when listening through speakers.
	"ERROR" appears in the display.	• You have done a wrong operation./Your operation was not accepted by the player. → Operate again according to the Operating Instructions.
	The power is turned off automatically.	• Replace all the batteries with new ones.
	Unusual sound is heard. The sound is noisy, weak or has poor quality.	• Replace all the batteries with new ones if they are weak.
CD Player	The CD does not play.	• Make sure that the CD tray is closed.
	"NO DISC" lights in the display even when a CD is in place.	• Place the CD with the label surface up. • Clean the CD. • Take out the CD and leave the CD tray open for about an hour to dry moisture condensation. • Press ■ on the CD section to switch the function of the player to "CD"
	The sound drops out.	• Reduce the volume. • Clean the CD, or replace it if the CD is badly damaged • Place the player in a location free from vibration.
	When listening to the CD, the TV or radio becomes noisy.	• Move the player away from the TV or radio.
	You cannot operate the CD section of the player.	• The player is set to operate a MD recorder. → Press CONTROL MD → CD so that you can operate the CD section of the player.

continued

Troubleshooting (continued)

	Symptom	Remedy
Radio	The audio is not stereo.	• Press MENU to make "STEREO" appear in the display and press ENTER.
	The audio is weak or has poor quality.	• Depending on the FM reception conditions, noise may be heard. • Replace all the batteries with new ones if they are weak. • Move the player away from the TV. • If you are using the remote while listening to AM radio, noise may be heard. This is unavoidable.
	The picture of your TV becomes unstable.	• If you are listening to an FM program near the TV with an indoor antenna, move the player away from the TV.
Tape Player	The tape does not move when you press an operation button.	• Insert the tape properly and close the tape compartment securely. • Replace all the batteries with new ones.
	The buttons for recording do not function/The tape does not play.	• Make sure the safety tab of the tape in the tape compartment is in place. • Press ■ on the tape section to switch the function of the player to "TAPE".
	The tape does not erase completely.	• Clean the erasing heads (see page 54.)
	The tape does not record.	• Make sure the tape is inserted properly. • Make sure the safety tab of the tape in the tape compartment is in place.
	The audio is weak/The audio quality is poor.	• Clean the heads, pinch rollers and capstans (See page 54). • Demagnetize the heads using a demagnetizer (see page 54).
	The tape player cannot be paused during playback.	• The tape player can be paused during recording only.

	Symptom	Remedy
Timer	The timer does not operate.	• Make sure the time on the clock is correct. • Replace all the batteries in the player including the back-up batteries with new ones if they are weak. • Check to see if the AC power had been cut off. • Make sure the tape has not wound to the end. • Make sure the ⊙ (clock) indication is displayed.
Remote	The remote does not function.	• Replace all the batteries in the remote with new ones if they are weak. • Make sure that you are pointing the remote at the remote sensor on the player. • Remove any obstacles in the path of the remote and the player. • Make sure the remote sensor is not exposed to strong light such as direct sunlight or fluorescent lamp light. • Move closer to the player when using the remote.
Connecting optional components	No sound from the portable MD recorder connected to the MD CONTROL jack of this player.	• If you have connected any component to the LINE IN jack of this player, disconnect the component.

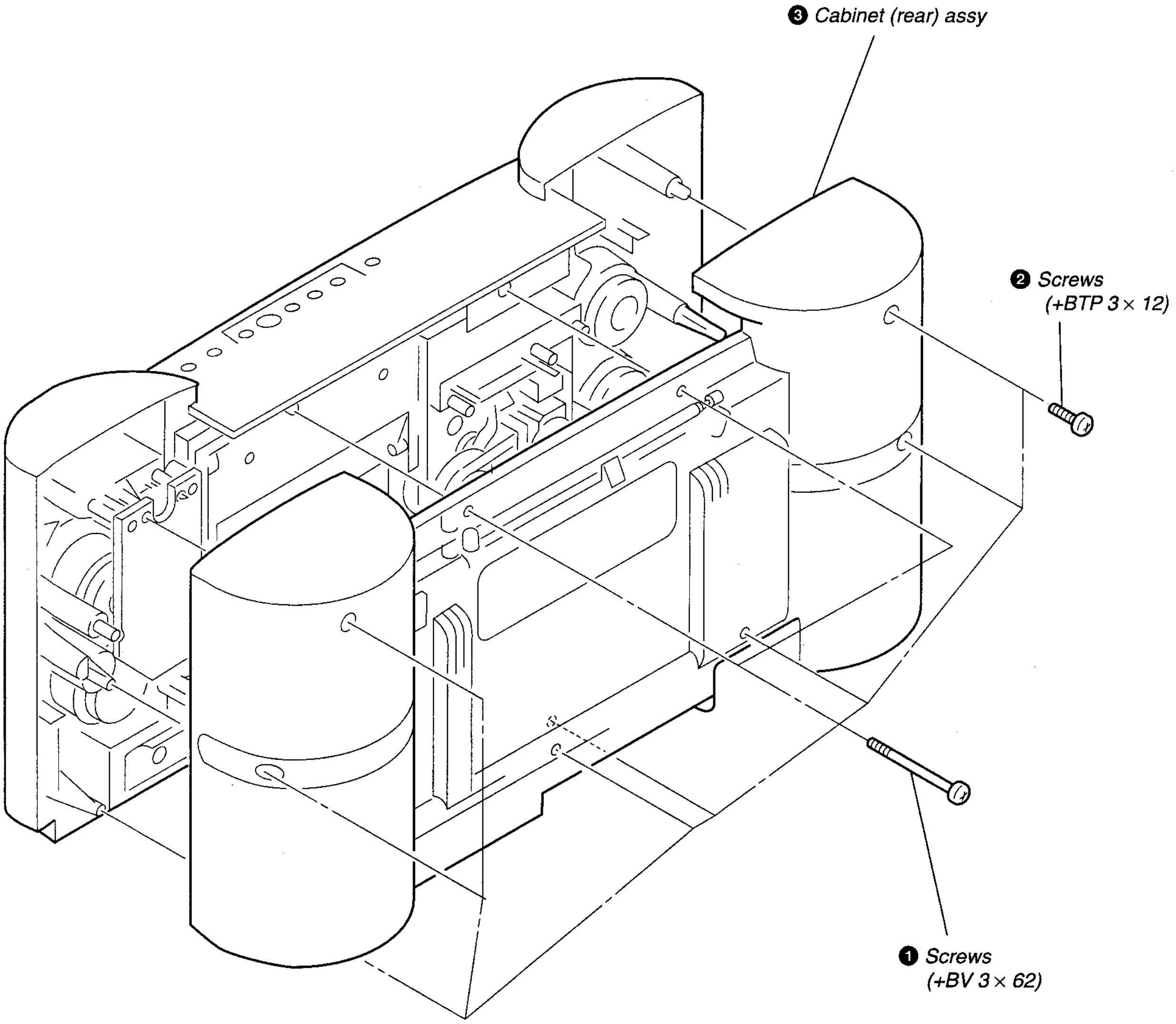
The player uses a built-in micro computer for its various operations. Due to change in power supply conditions, etc., operation may sometimes become unstable. After trying the above remedies, if the player still does not function properly, unplug the AC power cord and remove all the batteries. After all indications in the display disappear, plug the power cord and insert the batteries again. If the problem persists, please consult your nearest Sony dealer.

SECTION 3
DISASSEMBLY

CABINET (REAR) ASSY → MAIN BOARD, RADIO BOARD
- → CD TRAY ASSY → CONTROL BOARD, REGULATOR BOARD
- → MECHANISM ASSY → LOADING BOARD, LOADING CHASSIS SECTION → DRIVE ASSY, CD TRAY ASSY, RELAY BOARD
- → JACK BOARD, H/P BOARD, MD JACK BOARD, DC OUT BOARD

Note : Follow the disassembly procedure in the numerical order given.

3-1. CABINET (REAR) ASSY

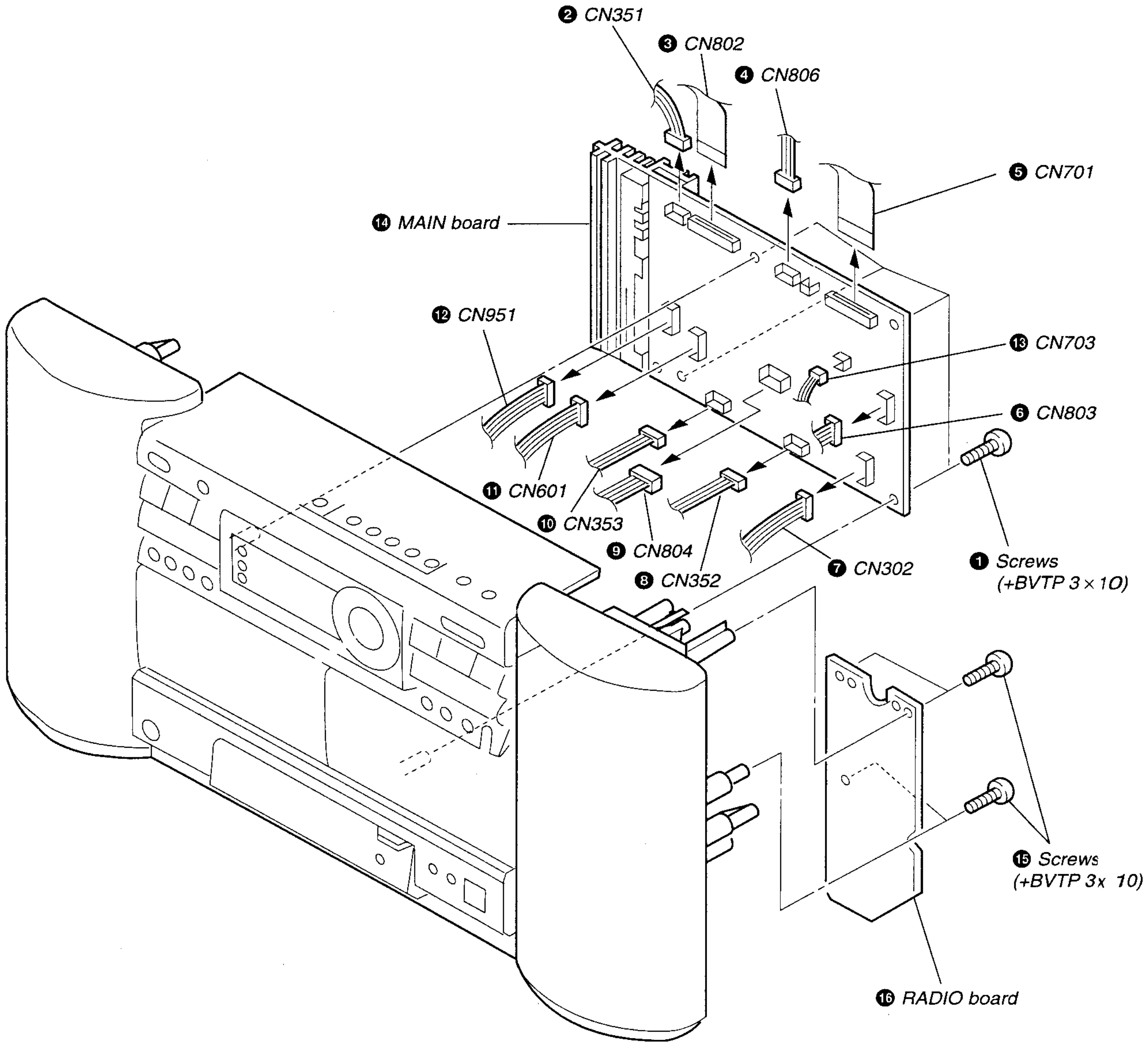


❸ *Cabinet (rear) assy*

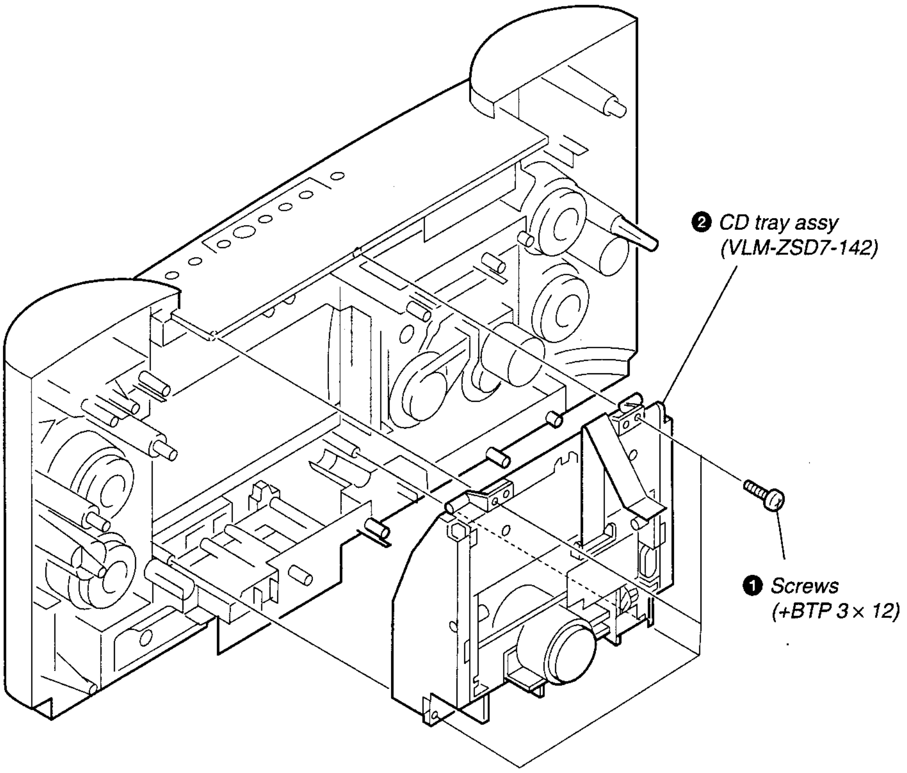
❷ *Screws (+BTP 3 × 12)*

❶ *Screws (+BV 3 × 62)*

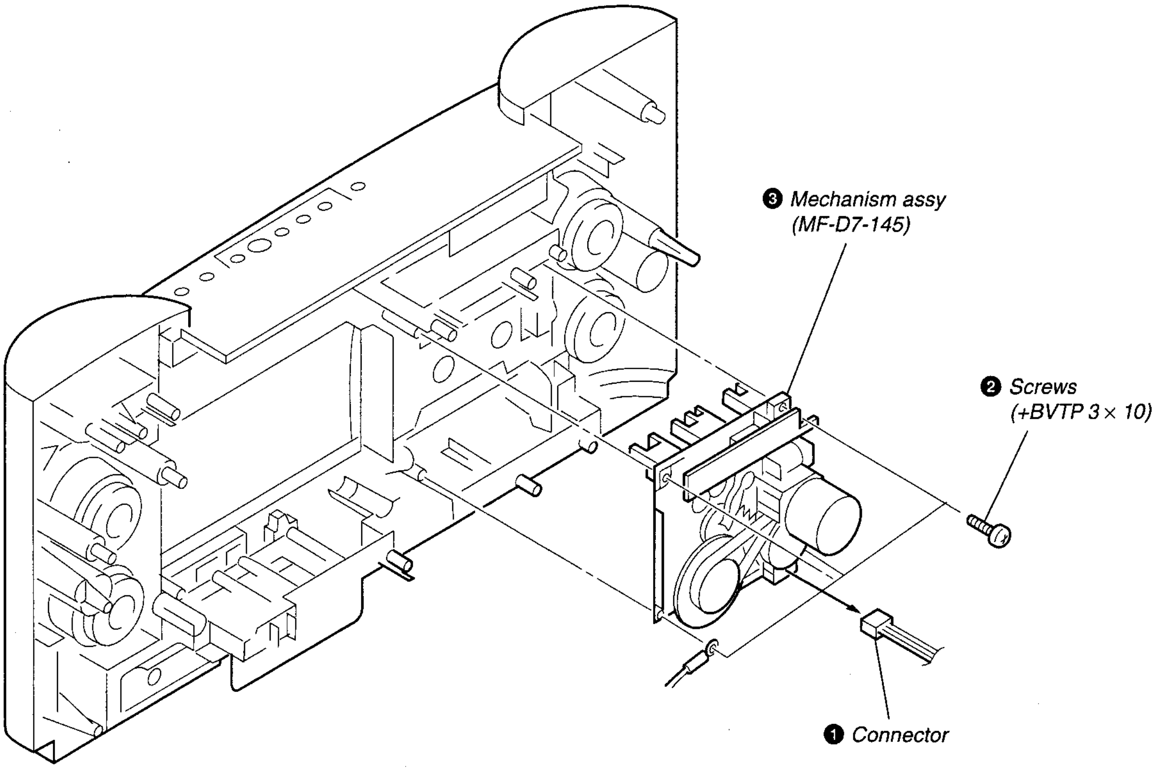
3-2. MAIN BOARD, RADIO BOARD


❷ CN351
❸ CN802
❹ CN806
❺ CN701
⓮ MAIN board
⓬ CN951
⓭ CN703
❻ CN803
⓫ CN601
❿ CN353
❾ CN804
❽ CN352
❼ CN302
❶ Screws
(+BVTP 3 × 10)
⓯ Screws
(+BVTP 3× 10)
⓰ RADIO board

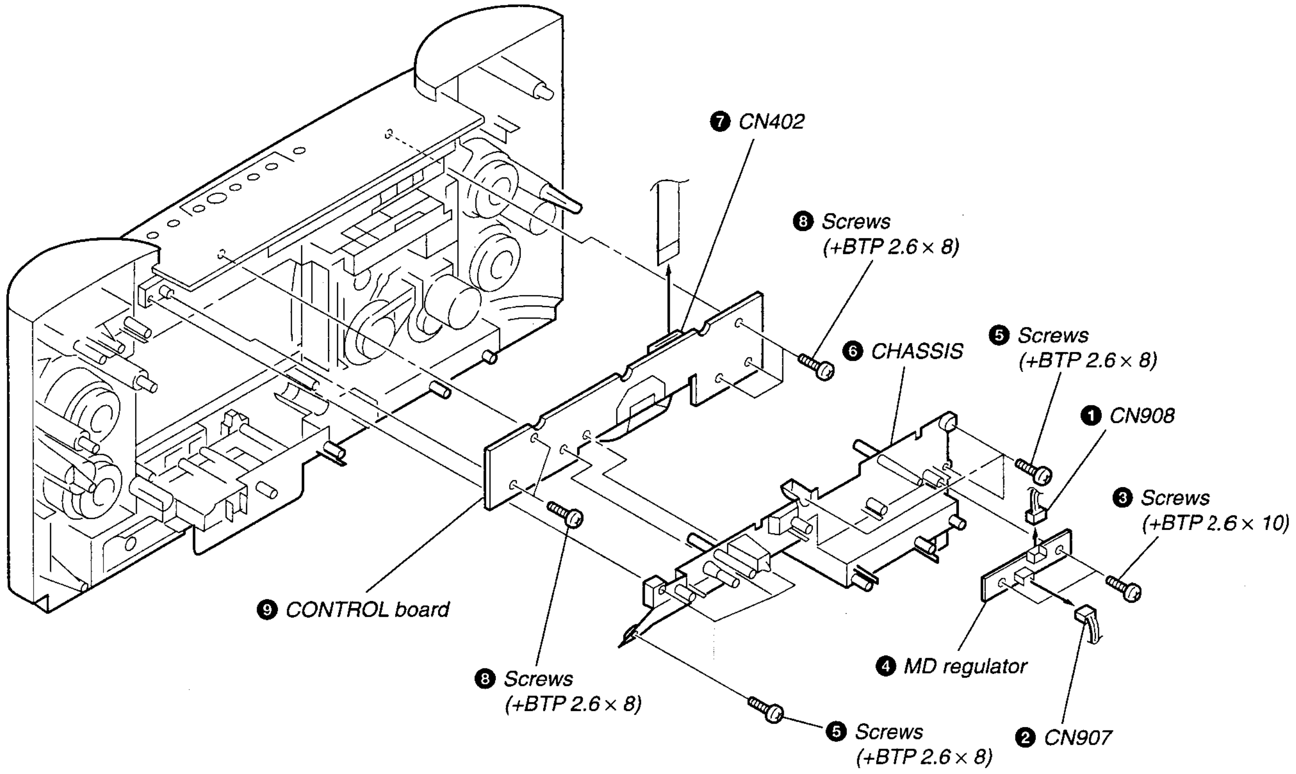
3-3. CD TRAY ASSY (VLM-ZSD7-142)


❷ CD tray assy
(VLM-ZSD7-142)
❶ Screws
(+BTP 3 × 12)

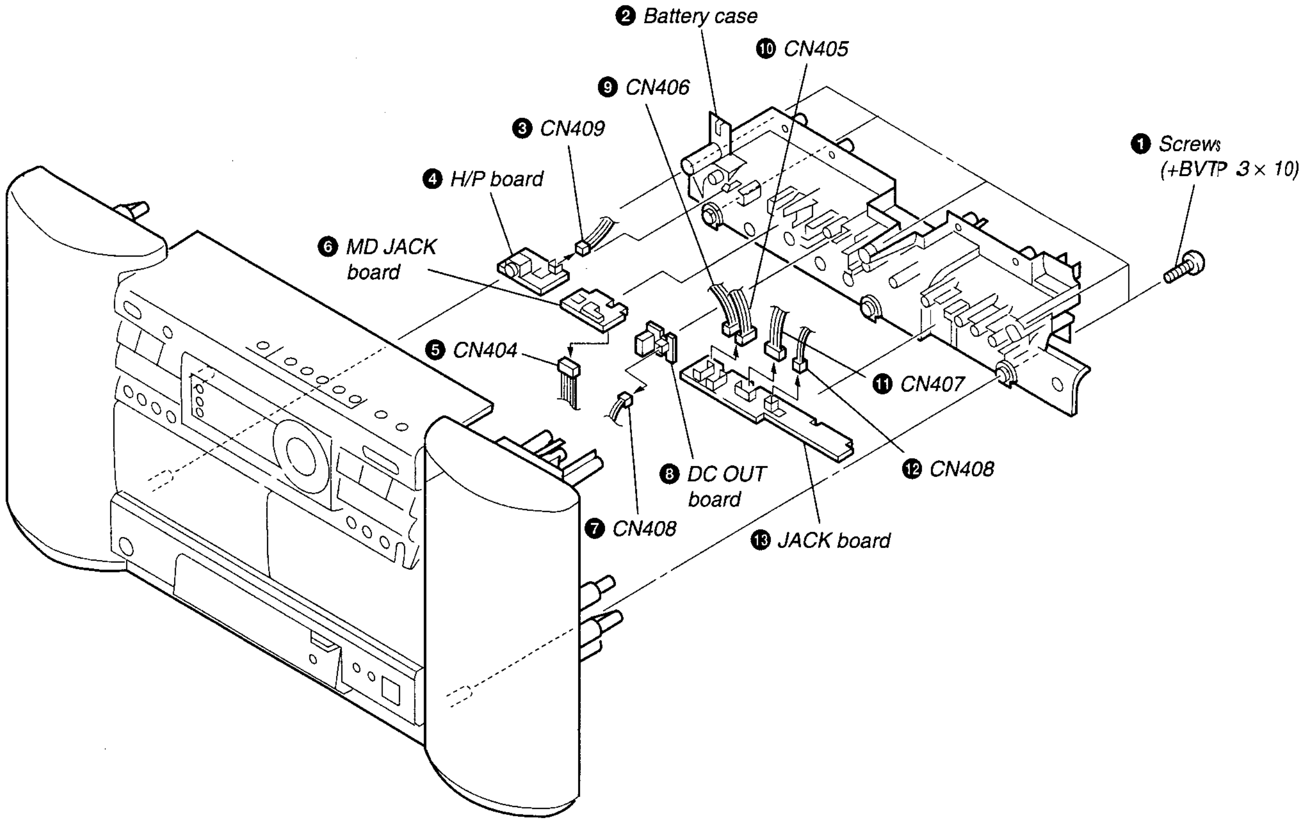
3-4. MECHANISM ASSY (FM-D7-145)


❸ Mechanism assy
(MF-D7-145)
❷ Screws
(+BVTP 3 × 10)
❶ Connector

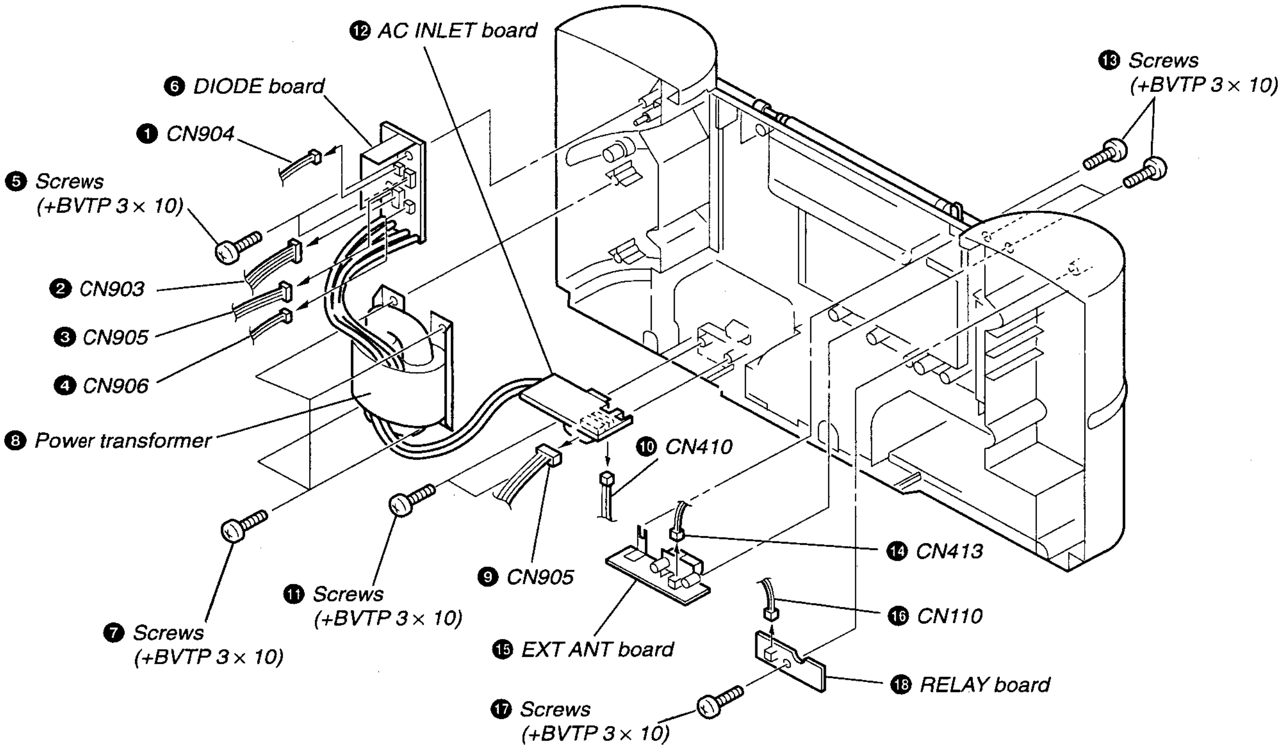
3-5. CONTROL BOARD, MD REGULATOR BOARD


❼ CN402
❽ Screws (+BTP 2.6 × 8)
❻ CHASSIS
❺ Screws (+BTP 2.6 × 8)
❶ CN908
❸ Screws (+BTP 2.6 × 10)
❾ CONTROL board
❹ MD regulator
❽ Screws (+BTP 2.6 × 8)
❺ Screws (+BTP 2.6 × 8)
❷ CN907

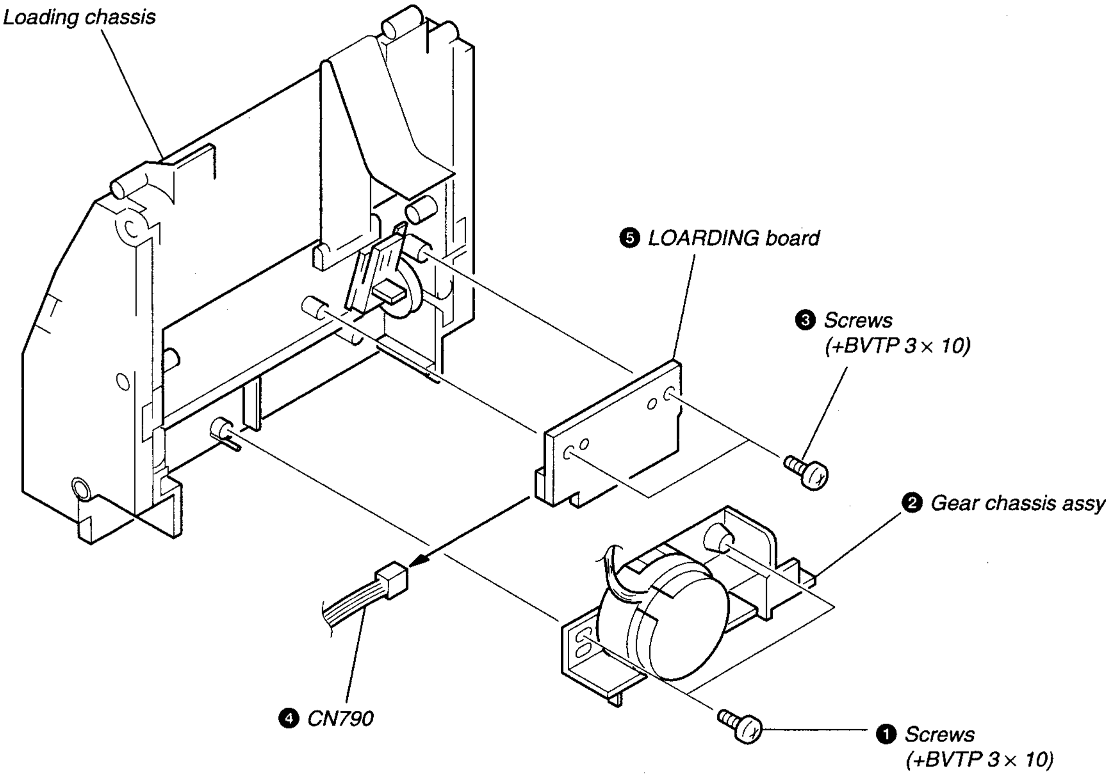
3-6. JACK BOARD, H/P BOARD, MD JACK BOARD, DC OUT BOARD


❷ Battery case
❿ CN405
❾ CN406
❸ CN409
❹ H/P board
❶ Screws (+BVTP 3 × 10)
❻ MD JACK board
❺ CN404
⓫ CN407
❽ DC OUT board
⓬ CN408
❼ CN408
⓭ JACK board

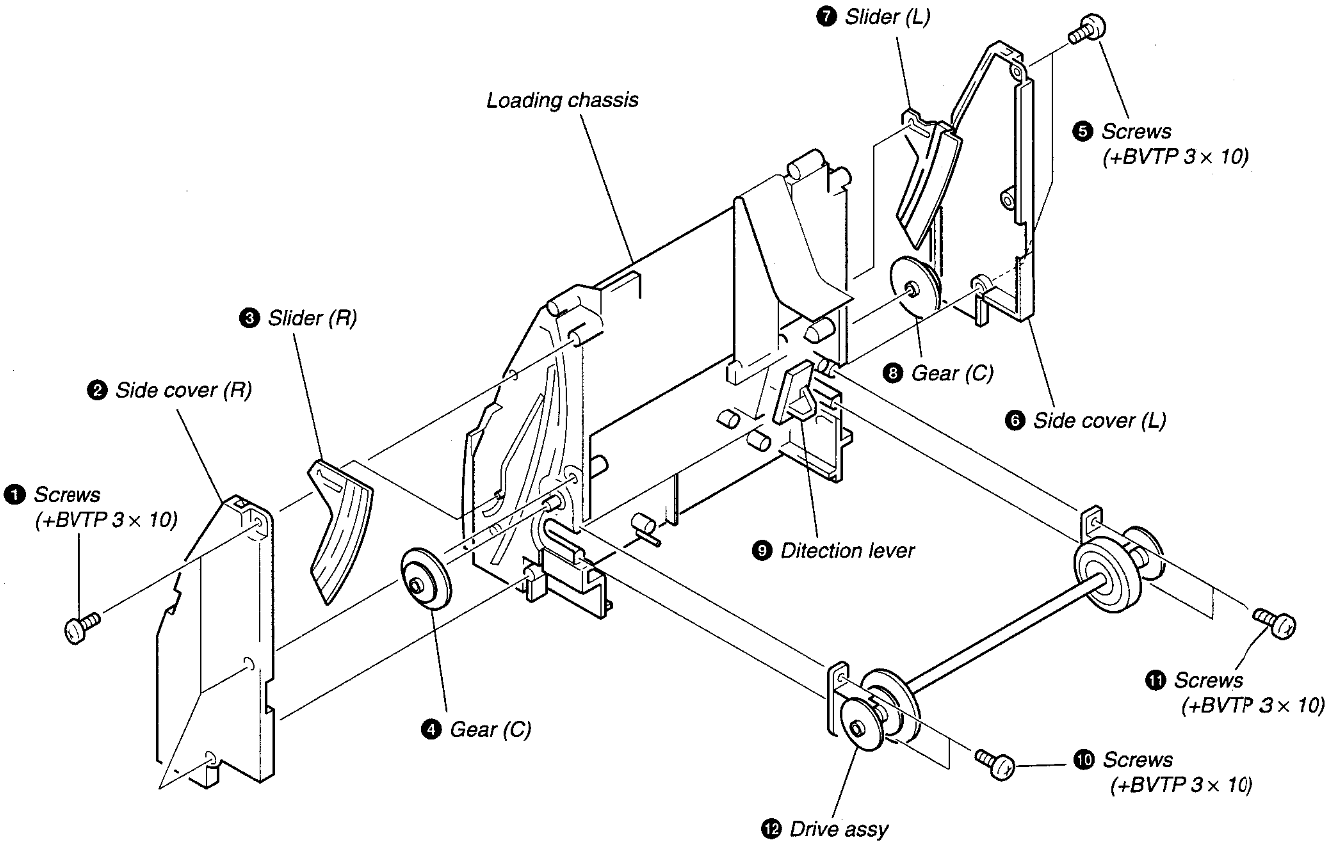
3-7. DIODE BOARD, AC INLET BOARD, EXT ANT BOARD, RELAY BOARD


⑫ AC INLET board
⑥ DIODE board
① CN904
⑤ Screws
(+BVTP 3 × 10)
② CN903
③ CN905
④ CN906
⑧ Power transformer
⑬ Screws
(+BVTP 3 × 10)
⑩ CN410
⑭ CN413
⑨ CN905
⑪ Screws
(+BVTP 3 × 10)
⑦ Screws
(+BVTP 3 × 10)
⑯ CN110
⑮ EXT ANT board
⑱ RELAY board
⑰ Screws
(+BVTP 3 × 10)

3-8. LOADING BOARD

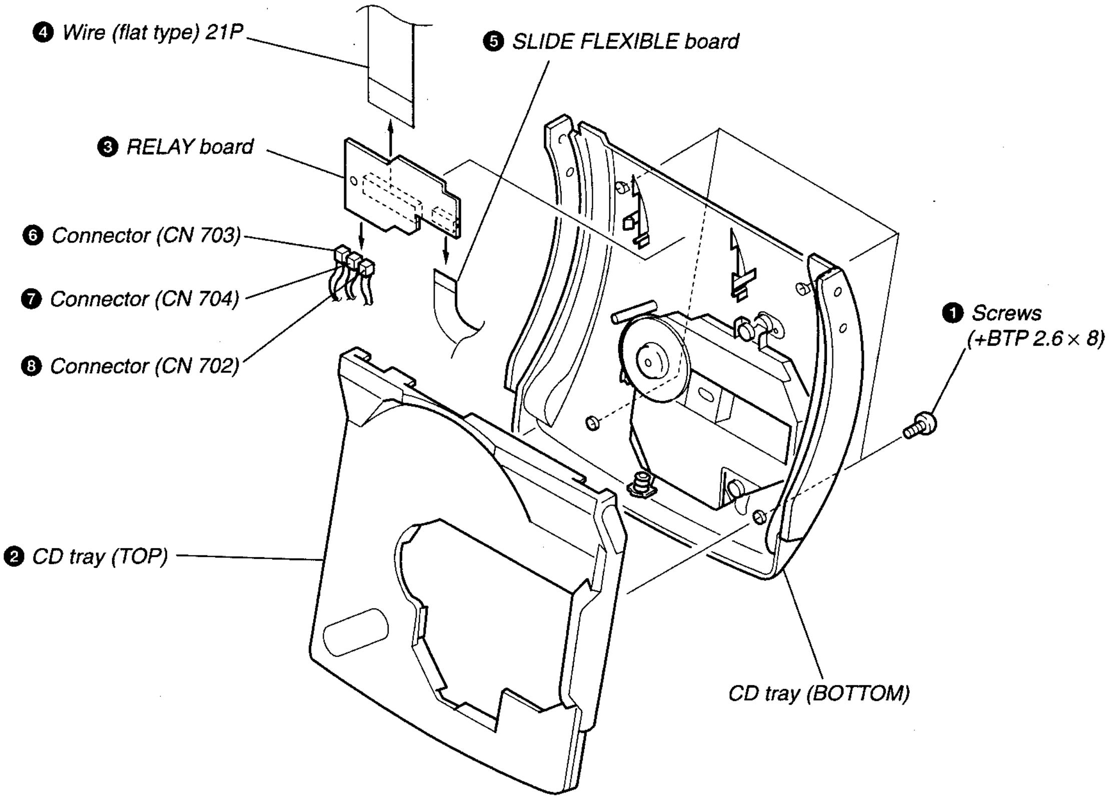

Loading chassis
⑤ LOARDING board
③ Screws
(+BVTP 3 × 10)
② Gear chassis assy
④ CN790
① Screws
(+BVTP 3 × 10)

3-9. LOADING CHASSIS ASSY, DRIVE ASSY



❼ Slider (L)
Loading chassis
❺ Screws
(+BVTP 3 × 10)
❸ Slider (R)
❷ Side cover (R)
❽ Gear (C)
❻ Side cover (L)
❶ Screws
(+BVTP 3 × 10)
❾ Ditection lever
❹ Gear (C)
⓫ Screws
(+BVTP 3 × 10)
❿ Screws
(+BVTP 3 × 10)
⓬ Drive assy

3-10. CD TRAY ASSY, RELAY BOARD



❹ Wire (flat type) 21P
❺ SLIDE FLEXIBLE board
❸ RELAY board
❻ Connector (CN 703)
❼ Connector (CN 704)
❽ Connector (CN 702)
❶ Screws
(+BTP 2.6 × 8)
❷ CD tray (TOP)
CD tray (BOTTOM)

SECTION 4
TEST MODE

1. HOW TO ENTER THE TEST MODE

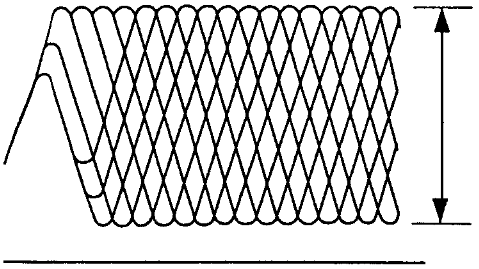
Insert a CD into ZS-D7. Remove the power cord.
While the power cord is removed, and while pressing the ENTER key and the CD STOP key, connect the power cord to wall outlet. The ZS-D7 enters the test mode.

MD EE TG FB
88 07 00 3A0

The default display appears as shown.
Press the PLAY key to start rotating CD and press the PLAY key again to hear the CD music.
When you want to enter the automatic adjustment mode, press the ENTER key. The display values change in the automatic adjustment mode, but have no actual effects on operation.
Turn off the main power to exit the test mode.

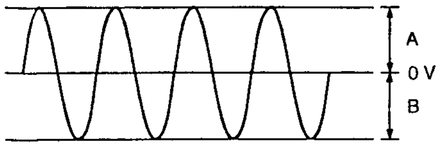
2. RF Level and Jitter Check

After completing the step 1 automatic adjustment, enter the test mode then the PLAY state.
Measurement Point
MAIN board : TP1 (MAIN board C-12. See page 26.)
(Confirm by oscilloscope)
Confirm that jitter is 9.0 ns or less. Confirm also that the RF level is from 0.9 to 1.3 Vp-p.



3. Traverse Signal Check

* Measurement Point: TP2 (MAIN board C-12. See page 26.)
(Confirm by oscilloscope)
From the condition of above step 2, press the FF or FR key.
Check that the traverse level is from 300 mVp-p to 500 mVp-p.



SECTION 5
MECHANICAL ADJUSTMENT

PRECAUTION

1. Clean the following parts with a denatured-alchool-moistened swab:
   - record/playback head
   - erase head
   - capstans
   - pinch roller
   - rubber belts
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30 to 80 g•cm (0.42 to 1.12 oz•inch)
FWD back tension		2 to 10 g•cm (0.028 to 0.14 oz•inch)
REV	CQ-102RC	30 to 80 g•cm (0.42 to 1.12 oz•inch)
REW back tension		2 to 10 g•cm (0.028 to 0.14 oz•inch)
FF • REW	CQ-201B	70 to 200 g•cm (0.98 to 2.8 oz•inch)

Tape Tension Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-403A	more than 70g•cm (more than 0.97 oz • inch)
REV	CQ-403R	more than 70g•cm (more than 0.97 oz • inch)

SECTION 6
ELECTRICAL ADJUSTMENT

TAPE RECODER SECTION

0 dB = 0.775V

PRECAUTION

1. Adjustments should be performed in the test mode.
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
4. Lock the adjustment parts/components with locking agent such as Neji-lock after adjustments are completed.
5. Perform adjustments under the specified voltage unless otherwise specified.
6. Perform adjustments in the order given. (Perform the playback circuit first then adjust the recording circuit, in principle.)
7. Adjustments should be performed for both L-channel and R-channel.

- **Standard input level**

Input Pin	LINE IN
Signal source impedance	10 kΩ
Input signal level	0.436 V (–5 dB)

- **Standard output level**

Output Pin	LINE OUT
Load impedance	47 kΩ
Output signal level	0.25 V (–9.8 dB)

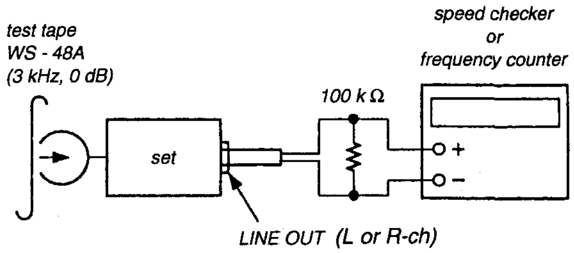
- **Test tape**

TestTape	Signal	Used for
P-4-A100J	10 kHz, -10 dB	REC/PB/ERASE Head azimuth and phase adjustment.
WS-48A	3 kHz, 0 dB	Tape speed adjustment

Tape Speed Adjustment

Procedure:

Mode : FWD playback


test tape
WS - 48A
(3 kHz, 0 dB)
speed checker
or
frequency counter
100 k Ω
set
+
–
LINE OUT (L or R-ch)

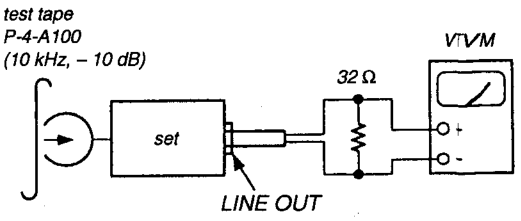
1. Press the TAPE ▶ Key to enter the playback mode.
2. Adjust the variable resistor of the motor (M691) so that the frequency counter reading is from 2,985 to 3,015 Hz.
3. Confirm that the tape speed difference between the tape top and end is within 1.5 %.

Record/Playback Head Azimuth Adjustment

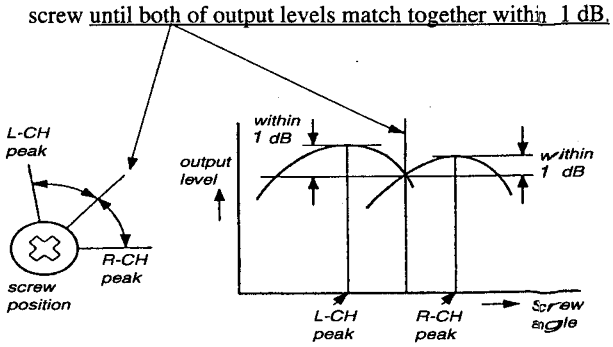
Note:
- Perform adjustment after head has changed the tape running direction. (When head is in the FWD direction position, start adjustment in the REV mode.
- Adjustment must be completed by cw turning of adjustment screw.
- After the adjustment, lock the screws with locking compound.

Procedure:

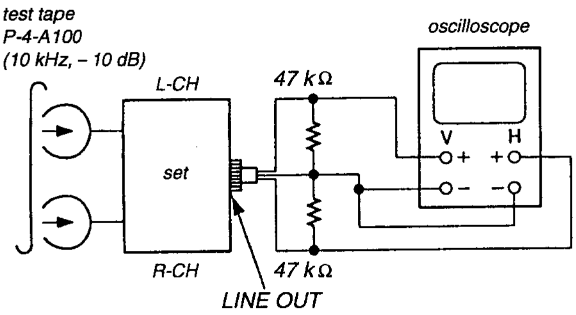
1. Mode : REV playback

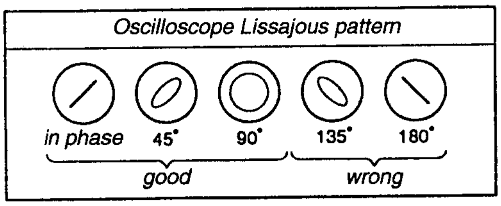

test tape
P-4-A100
(10 kHz, – 10 dB)
VTVM
32 Ω
set
+
-
LINE OUT

2. Turn the adjustment screw for the maximum output levels. If these levels at L-ch and R-ch do not match, turn the adjustment screw until both of output levels match together within 1 dB.


L-CH
peak
R-CH
peak
screw
position
within
1 dB
output
level
within
1 dB
L-CH
peak
R-CH
peak
screw
angle

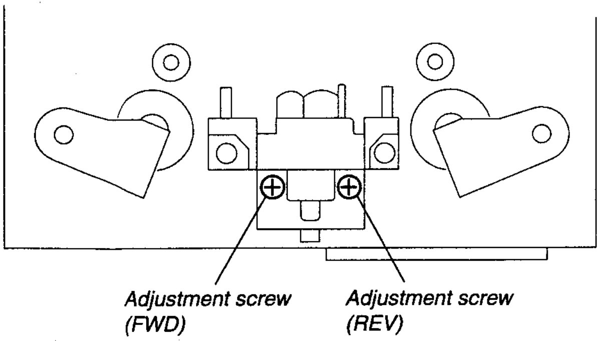
3. Phase Check
   Mode : REV playback
4. Perform the above steps 1 through 3.
5. Confirm that the phase difference between L-ch and R-ch is in the range from 0° to 90°.


test tape
P-4-A100
(10 kHz, - 10 dB)
oscilloscope
L-CH
47 kΩ
set
V
H
+
+
-
-
R-CH
47 kΩ
LINE OUT


Oscilloscope Lissajous pattern
in phase
45°
90°
135°
180°
good
wrong

Adjustment Location :

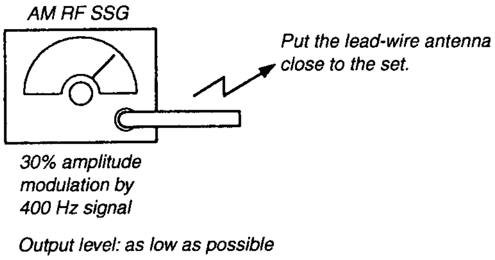
— When viewed from the top —


Adjustment screw
(FWD)
Adjustment screw
(REV)

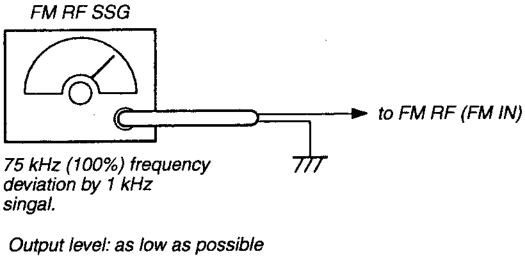
TUNER SECTION 0 dB = 1 μV

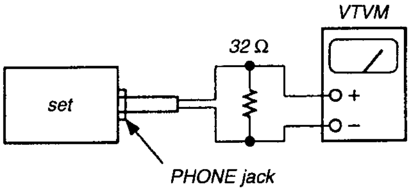
- **AM section**

  [Switch and knob position]
  • Function mode: RADIO
  • VOLUME: mechanical center


AM RF SSG
Put the lead-wire antenna close to the set.
30% amplitude modulation by 400 Hz signal
Output level: as low as possible

- **FM section**


FM RF SSG
to FM RF (FM IN)
75 kHz (100%) frequency deviation by 1 kHz singal.
Output level: as low as possible


VTVM
32 Ω
set
+
-
PHONE jack

- Repeat the proceduresin each adjustment several times for the maximum level meter indication.
- The frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

( ) : US/Canadian model

MW/AM RECEPTION FREQUENCY COVERAGE CHECK		
Frequency indication	531 kHz (530 kHz)	1,611 kHz (1,710 kHZ)
Digital voltmeter reading	0.8 to 1.2 V (0.9 to 1.1 V)	4.7 to 5.7 V (5.4 to 6.4 V)
Adjustment	L3	check

AEP/UK model

LW RECEPTION FREQUENCY COVERAGE CHECK		
Frequency indication	153 kHz	279 kHz
Digital voltmeter reading	0.6 to 0.7 V	4.7 to 5.7 V
Adjustment	CT4	check

( ) : US/Canadian model

MW/AM TRACKING ADJUSTMENT	
Adjust for a maximum defection of level meter.	
CT2	CT5
621 kHz (620 kHz)	1,404 kHz (1,400 kHz)

AEP/UK model

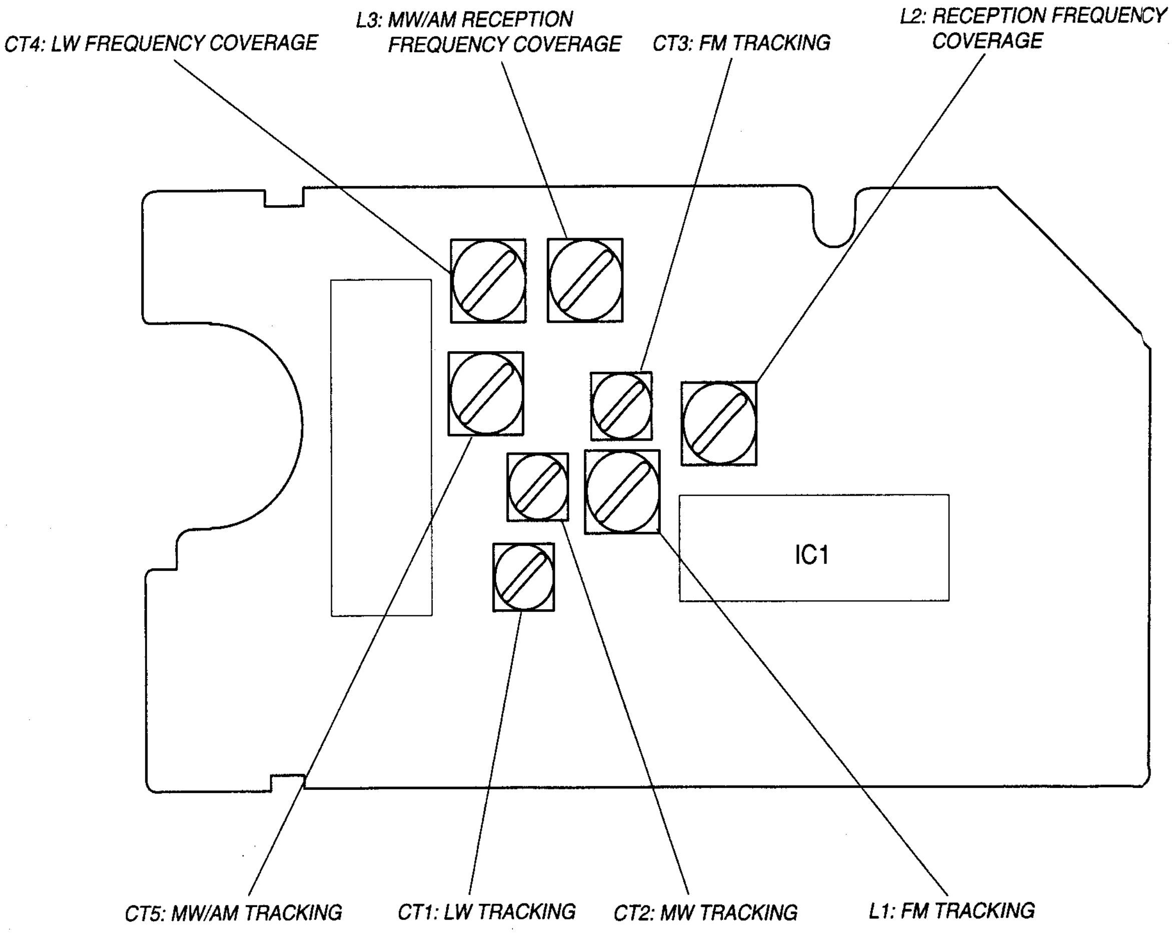
LW TRACKING ADJUSTMENT	
Adjust for a maximum defection of level meter.	
CT1	check
162 kHz	261kHz

(   ): US/Canadian model

FM RECEPTION FREQUENCY COVERAGE CHECK		
Frequency indication	87.5 MHz	107 MHz (108 MHz)
Digital voltmeter reading	2.2 to 2.4 V	4.7 to 5.7 V
Adjustment	L2	check

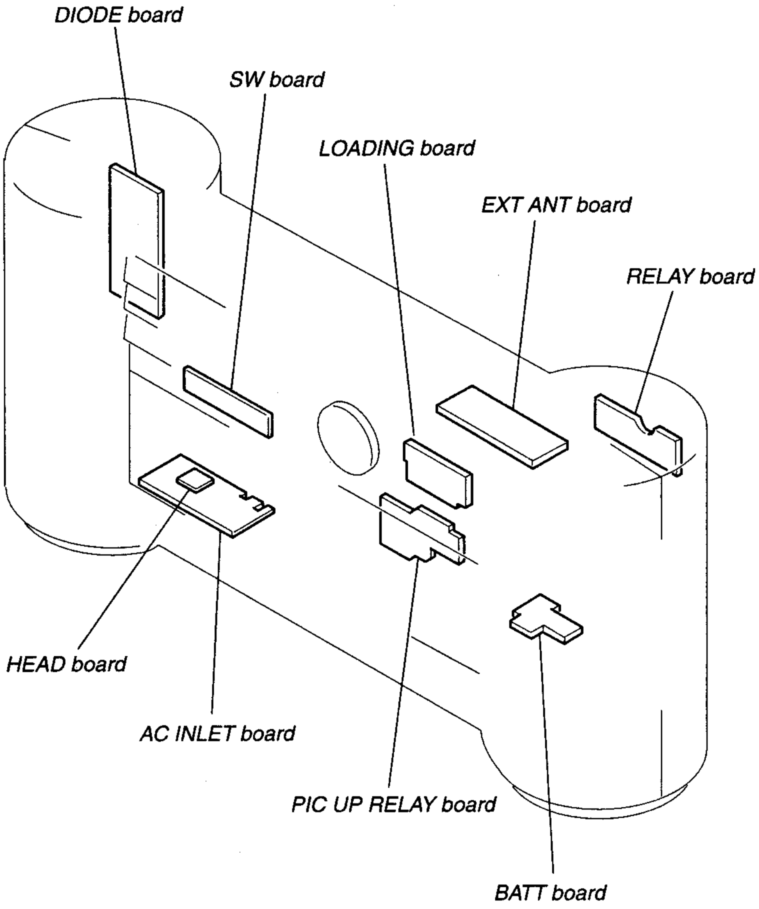
FM TRACKING ADJUSTMENT	
Adjust for a maximum defection of level meter.	
L1	CT3
87.5 MHz	108 MHz

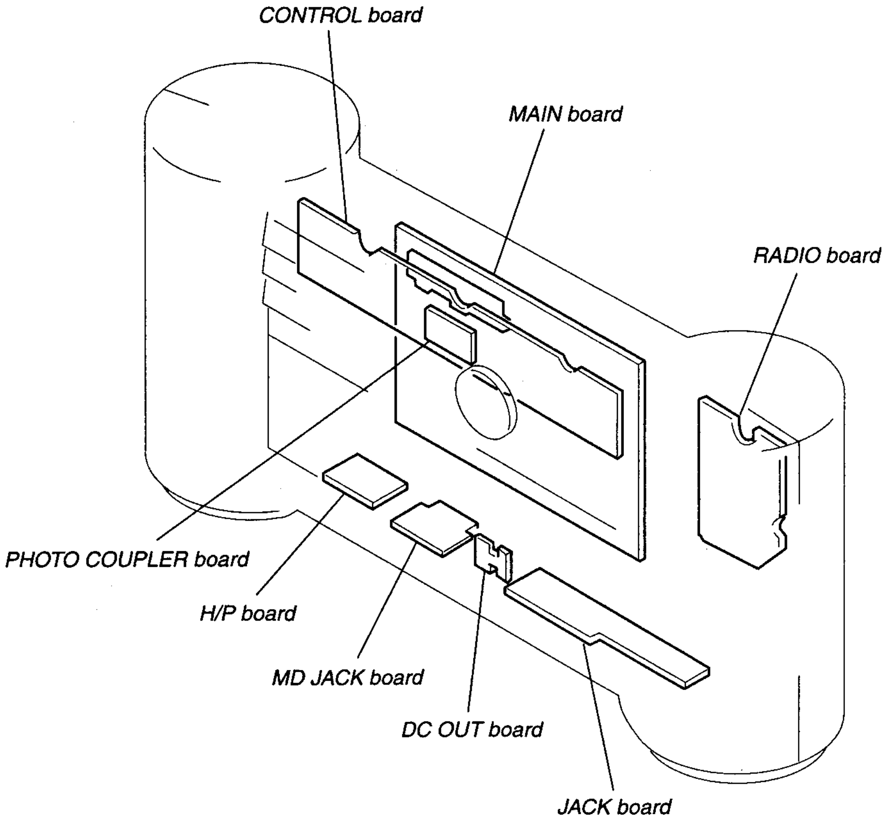
Adjustment Location: RADIO BOARD (SIDE A)


CT4: LW FREQUENCY COVERAGE
L3: MW/AM RECEPTION FREQUENCY COVERAGE
CT3: FM TRACKING
L2: RECEPTION FREQUENCY COVERAGE
IC1
CT5: MW/AM TRACKING
CT1: LW TRACKING
CT2: MW TRACKING
L1: FM TRACKING

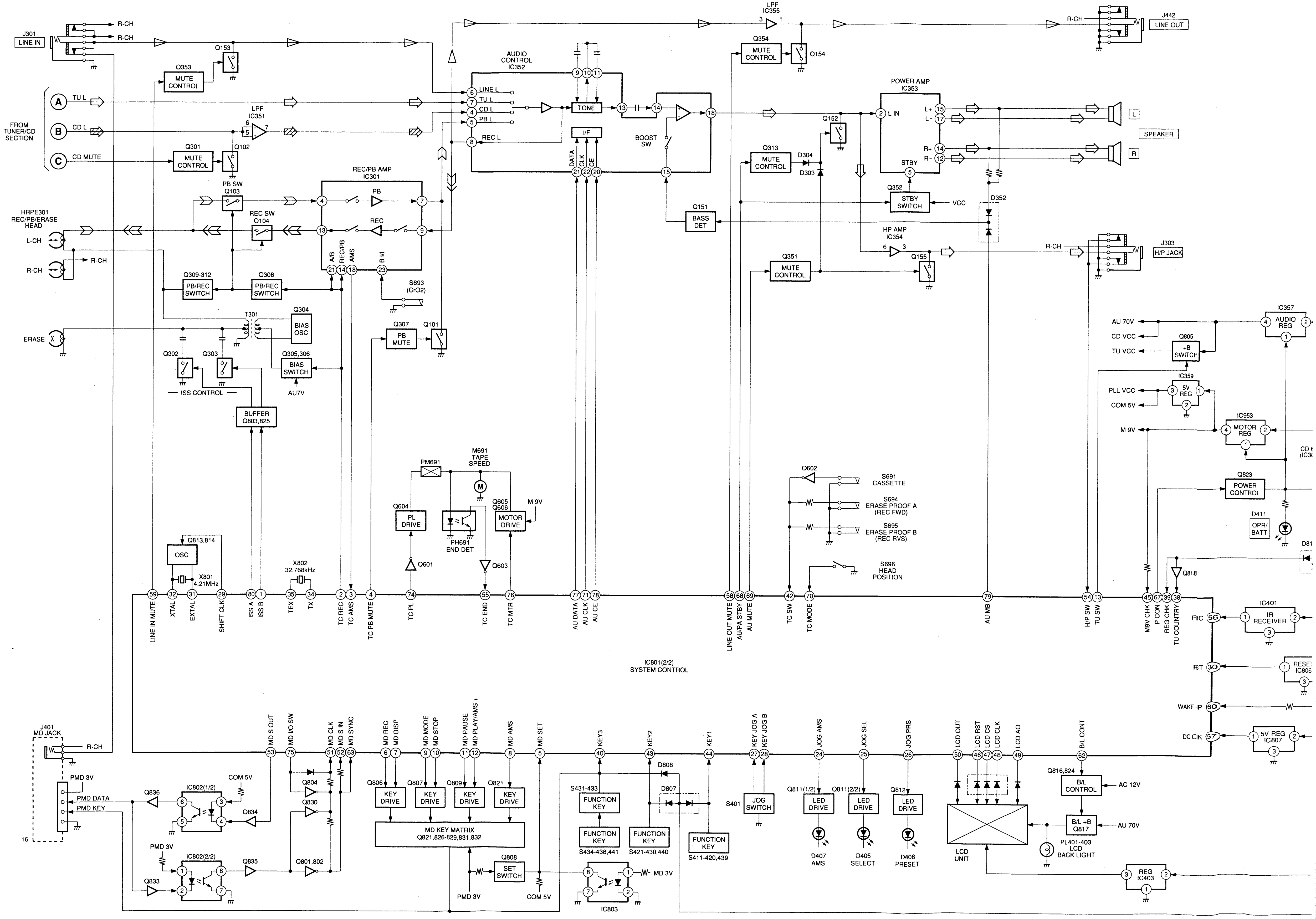
SECTION 7
DIAGRAMS

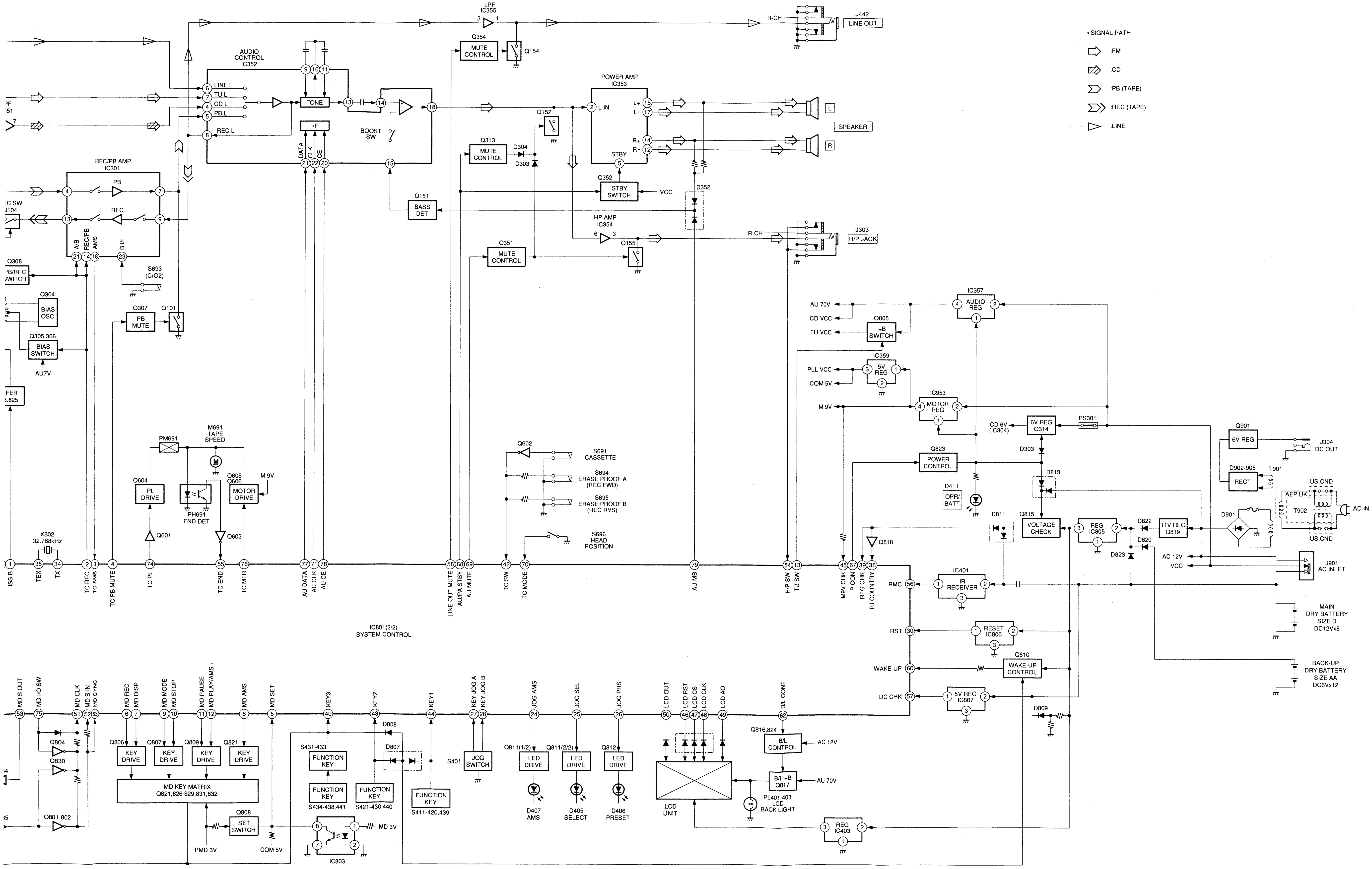
7-1. CIRCUIT BOARD LOCATION


DIODE board
SW board
LOADING board
EXT ANT board
RELAY board
HEAD board
AC INLET board
PIC UP RELAY board
BATT board

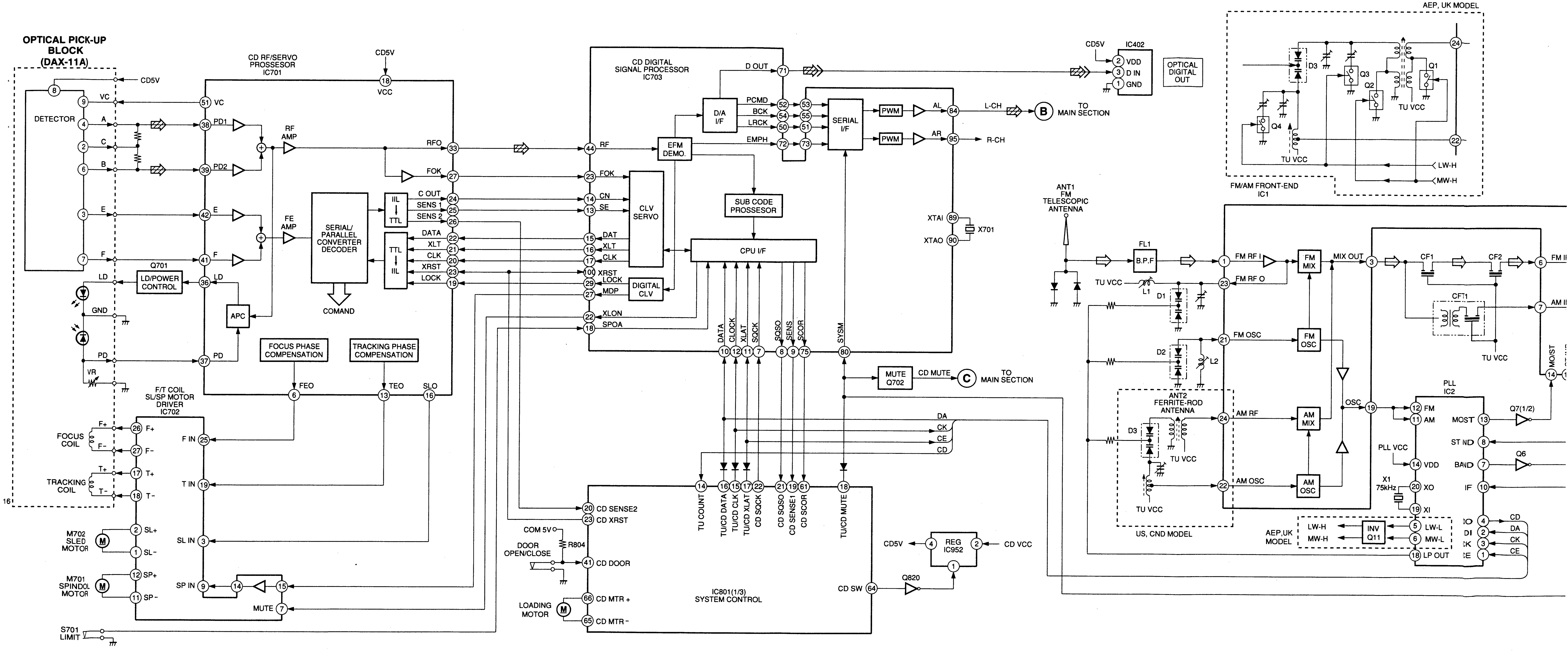

CONTROL board
MAIN board
RADIO board
PHOTO COUPLER board
H/P board
MD JACK board
DC OUT board
JACK board

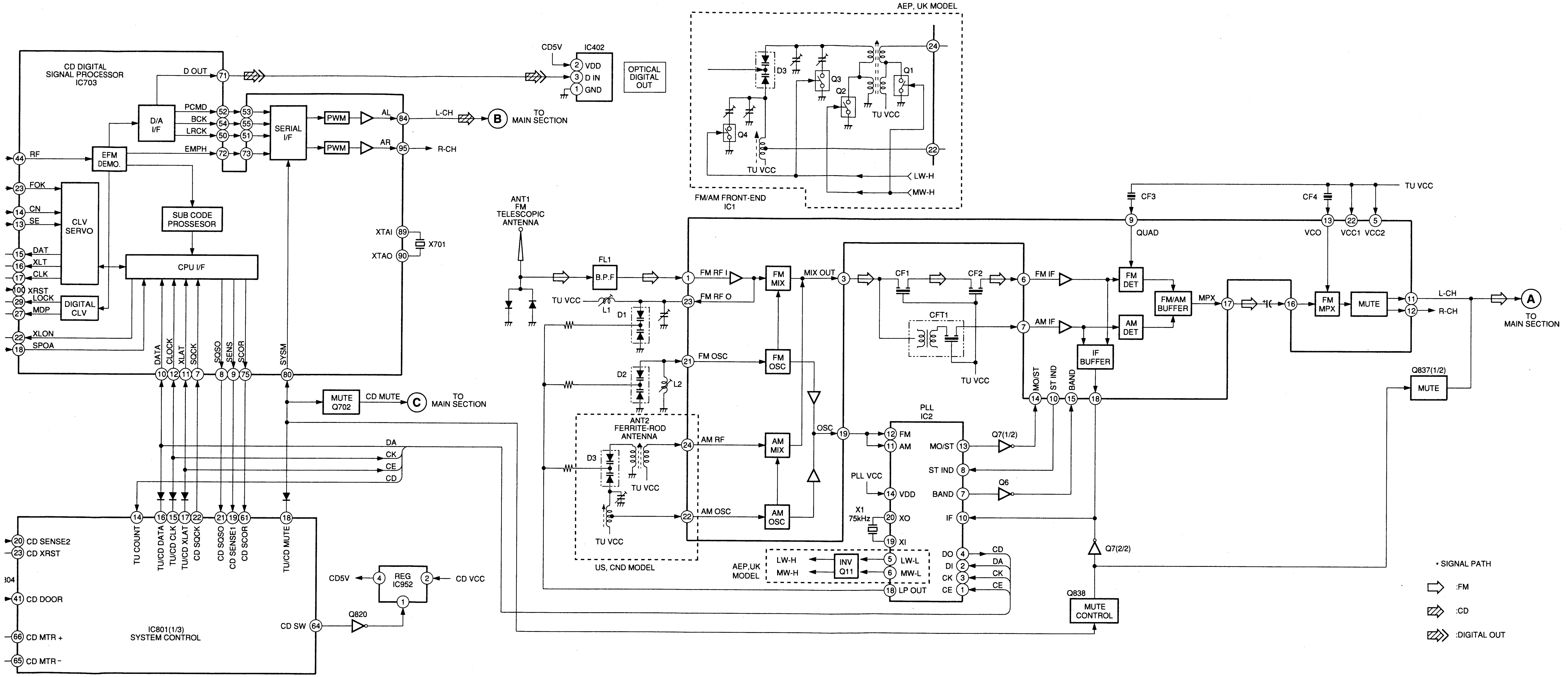
7-2. BLOCK DIAGRAM — MAIN SECTION —


J301
LINE IN
R-CH
Q153
Q353
MUTE CONTROL
FROM TUNER/CD SECTION
A TU L
B CD L
C CD MUTE
LPF IC351
Q301
MUTE CONTROL
Q102
PB SW Q103
REC SW Q104
REC/PB AMP IC301
PB
REC
HRPE301 REC/PB/ERASE HEAD
L-CH
R-CH
A/B
REC/PB
AMS
B I/I
Q309-312 PB/REC SWITCH
Q308 PB/REC SWITCH
S693 (CrO2)
ERASE
T301
Q304 BIAS OSC
Q305,306 BIAS SWITCH
AU7V
Q302
Q303
ISS CONTROL
BUFFER Q803,825
Q307 PB MUTE
Q101
AUDIO CONTROL IC352
LINE L
TU L
CD L
PB L
REC L
TONE
I/F
DATA
CLK
CE
BOOST SW
LPF IC355
Q354 MUTE CONTROL
Q154
J442 LINE OUT
POWER AMP IC353
L IN
L+
L-
R+
R-
STBY
SPEAKER
L
R
Q152
Q313 MUTE CONTROL
D304
D303
Q352 STBY SWITCH
VCC
Q151 BASS DET
D352
HP AMP IC354
Q155
J303 H/P JACK
Q351 MUTE CONTROL
IC357 AUDIO REG
AU 70V
CD VCC
TU VCC
Q805 +B SWITCH
IC359 5V REG
PLL VCC
COM 5V
IC953 MOTOR REG
M 9V
Q823 POWER CONTROL
D411 OPR/BATT
Q818
Q813,814
OSC
X801 4.21MHz
X802 32.768kHz
PM691
M691 TAPE SPEED
Q604 PL DRIVE
PH691 END DET
Q605 Q606 MOTOR DRIVE
M 9V
Q601
Q603
Q602
S691 CASSETTE
S694 ERASE PROOF A (REC FWD)
S695 ERASE PROOF B (REC RVS)
S696 HEAD POSITION
LINE IN MUTE
XTAL
EXTAL
SHIFT CLK
ISS A
ISS B
TEX
TX
TC REC
TC AMS
TC PB MUTE
TC PL
TC END
TC MTR
AU DATA
AU CLK
AU CE
LINE OUT MUTE
AU/PA STBY
AU MUTE
TC SW
TC MODE
AU MB
H/P SW
TU SW
M9V CHK
P CON
REG CHK
TU COUNTRY
RMC
IC401 IR RECEIVER
RST
RESET IC806
WAKE UP
DC CK
5V REG IC807
IC801(2/2) SYSTEM CONTROL
J401 MD JACK
PMD 3V
PMD DATA
PMD KEY
Q836
IC802(1/2)
COM 5V
Q834
PMD 3V
IC802(2/2)
Q833
Q835
Q801,802
Q804
Q830
MD S OUT
MD I/O SW
MD CLK
MD S IN
MD SYNC
MD REC
MD DISP
MD MODE
MD STOP
MD PAUSE
MD PLAY/AMS +
MD AMS
MD SET
KEY3
KEY2
KEY1
KEY JOG A
KEY JOG B
JOG AMS
JOG SEL
JOG PRS
LCD OUT
LCD RST
LCD CS
LCD CLK
LCD AO
B/L CONT
Q806 KEY DRIVE
Q807 KEY DRIVE
Q809 KEY DRIVE
Q821 KEY DRIVE
MD KEY MATRIX Q821,826-829,831,832
Q808 SET SWITCH
PMD 3V
COM 5V
S431-433 FUNCTION KEY
S434-438,441 FUNCTION KEY
S421-430,440 FUNCTION KEY
D808
D807
S411-420,439 FUNCTION KEY
IC803
MD 3V
S401 JOG SWITCH
Q811(1/2) LED DRIVE
Q811(2/2) LED DRIVE
Q812 LED DRIVE
D407 AMS
D405 SELECT
D406 PRESET
LCD UNIT
Q816,824 B/L CONTROL
AC 12V
B/L +B Q817
AU 70V
PL401-403 LCD BACK LIGHT
REG IC403


LPF
IC355
J442
LINE OUT
R-CH
• SIGNAL PATH
:FM
:CD
:PB (TAPE)
:REC (TAPE)
:LINE
Q354
MUTE CONTROL
Q154
AUDIO CONTROL
IC352
LINE L
TU L
CD L
PB L
REC L
TONE
I/F
DATA
CLK
CE
BOOST SW
POWER AMP
IC353
L IN
L+
L-
R+
R-
STBY
L
SPEAKER
R
Q152
Q313
MUTE CONTROL
D304
D303
Q352
STBY SWITCH
VCC
D352
Q151
BASS DET
HP AMP
IC354
Q155
Q351
MUTE CONTROL
J303
H/P JACK
REC/PB AMP
IC301
PB
REC
A/B
REC/PB
AMS
B II/I
S693
(CrO2)
Q308
PB/REC SWITCH
Q304
BIAS OSC
Q305,306
BIAS SWITCH
AU7V
Q307
PB MUTE
Q101
PM691
M691
TAPE SPEED
Q604
PL DRIVE
Q601
PH691
END DET
Q605
Q606
MOTOR DRIVE
M 9V
Q603
Q602
S691
CASSETTE
S694
ERASE PROOF A
(REC FWD)
S695
ERASE PROOF B
(REC RVS)
S696
HEAD POSITION
X802
32.768kHz
TEX
TX
TC REC
TC AMS
TC PB MUTE
TC PL
TC END
TC MTR
AU DATA
AU CLK
AU CE
LINE OUT MUTE
AU/PA STBY
AU MUTE
TC SW
TC MODE
AU MB
H/P SW
TU SW
M9V CHK
P CON
REG CHK
TU COUNTRY
IC801(2/2)
SYSTEM CONTROL
IC357
AUDIO REG
AU 70V
CD VCC
TU VCC
Q805
+B SWITCH
IC359
5V REG
PLL VCC
COM 5V
IC953
MOTOR REG
M 9V
CD 6V
(IC304)
6V REG
Q314
PS301
D303
Q823
POWER CONTROL
D411
OPR/BATT
D813
D811
Q815
VOLTAGE CHECK
REG
IC805
D822
11V REG
Q819
D820
D823
D901
Q818
Q901
6V REG
J304
DC OUT
D902-905
RECT
T901
US,CND
AEP,UK
T902
AC IN
AC 12V
VCC
J901
AC INLET
RMC
IC401
IR RECEIVER
MAIN
DRY BATTERY
SIZE D
DC12Vx8
RST
RESET
IC806
WAKE-UP
Q810
WAKE-UP CONTROL
BACK-UP
DRY BATTERY
SIZE AA
DC6Vx12
DC CHK
5V REG
IC807
D809
MD S OUT
MD I/O SW
MD CLK
MD S IN
MD SYNC
MD REC
MD DISP
MD MODE
MD STOP
MD PAUSE
MD PLAY/AMS +
MD AMS
MD SET
KEY3
KEY2
KEY1
KEY JOG A
KEY JOG B
JOG AMS
JOG SEL
JOG PRS
LCD OUT
LCD RST
LCD CS
LCD CLK
LCD AO
B/L CONT
Q804
Q830
Q801,802
Q806
Q807
Q809
Q821
KEY DRIVE
MD KEY MATRIX
Q821,826-829,831,832
Q808
SET SWITCH
PMD 3V
COM 5V
S431-433
FUNCTION KEY
S434-438,441
D808
D807
S421-430,440
S411-420,439
IC803
MD 3V
S401
JOG SWITCH
Q811(1/2)
Q811(2/2)
Q812
LED DRIVE
D407
AMS
D405
SELECT
D406
PRESET
LCD UNIT
Q816,824
B/L CONTROL
AC 12V
B/L +B
Q817
AU 70V
PL401-403
LCD BACK LIGHT
REG
IC403

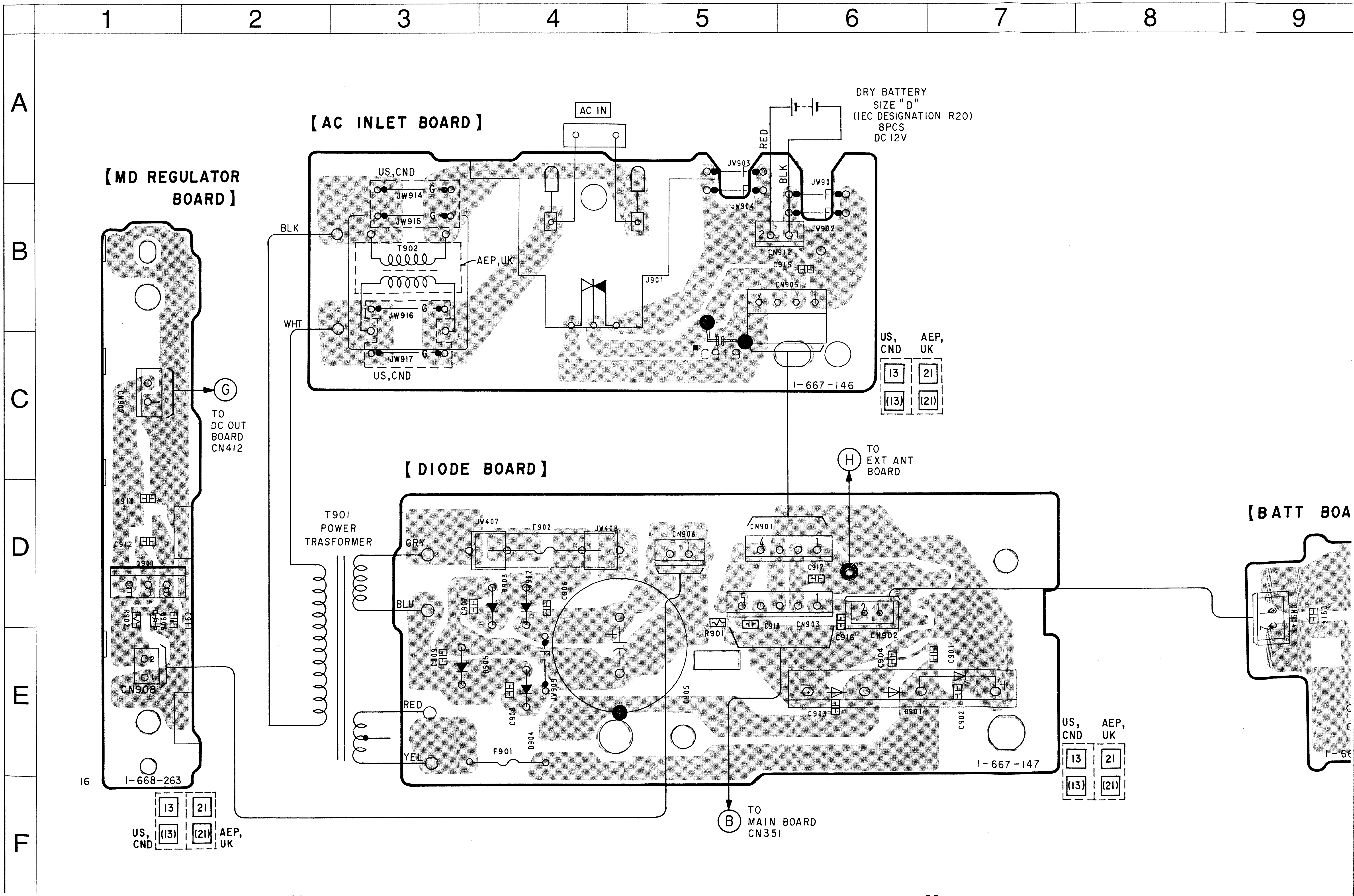
7-3. BLOCK DIAGRAM — TUNER/CD SECTION —


OPTICAL PICK-UP BLOCK (DAX-11A)
DETECTOR
VC
A
C
B
E
F
LD
GND
PD
VR
CD5V
CD RF/SERVO PROSSESOR IC701
VC
PD1
PD2
RF AMP
FE AMP
RFO
FOK
C OUT
SENS 1
SENS 2
DATA
XLT
CLK
XRST
LOCK
SERIAL/ PARALLEL CONVERTER DECODER
COMAND
IIL
TTL
Q701
LD/POWER CONTROL
APC
VCC
FOCUS PHASE COMPENSATION
TRACKING PHASE COMPENSATION
FEO
TEO
SLO
F/T COIL SL/SP MOTOR DRIVER IC702
FOCUS COIL
TRACKING COIL
F+
F-
T+
T-
F IN
T IN
SL IN
SP IN
MUTE
M702 SLED MOTOR
M701 SPINDOL MOTOR
SL+
SL-
SP+
SP-
S701 LIMIT
CD DIGITAL SIGNAL PROCESSOR IC703
D OUT
D/A I/F
PCMD
BCK
LRCK
EMPH
EFM DEMO.
RF
FOK
CN
SE
DAT
CLV SERVO
DIGITAL CLV
MDP
XLON
SPOA
SUB CODE PROSSESOR
CPU I/F
SERIAL I/F
PWM
AL
AR
L-CH
R-CH
XTAI
XTAO
X701
DATA
CLOCK
XLAT
SQCK
SQSO
SENS
SCOR
SYSM
TO MAIN SECTION
B
C
MUTE Q702
CD MUTE
IC402
VDD
D IN
GND
OPTICAL DIGITAL OUT
DA
CK
CE
CD
IC801(1/3) SYSTEM CONTROL
TU COUNT
TU/CD DATA
TU/CD CLK
TU/CD XLAT
CD SQCK
CD SQSO
CD SENSE1
CD SCOR
TU/CD MUTE
CD SENSE2
CD XRST
CD DOOR
CD MTR +
CD MTR -
CD SW
COM 5V
R804
DOOR OPEN/CLOSE
LOADING MOTOR
REG IC952
CD VCC
Q820
AEP, UK MODEL
FM/AM FRONT-END IC1
D3
Q1
Q2
Q3
Q4
TU VCC
LW-H
MW-H
ANT1 FM TELESCOPIC ANTENNA
FL1
B.P.F
L1
L2
D1
D2
FM RF I
FM RF O
FM MIX
MIX OUT
FM OSC
AM RF
AM MIX
AM OSC
OSC
CF1
CF2
FM IF
AM IF
ANT2 FERRITE-ROD ANTENNA
US, CND MODEL
PLL IC2
FM
AM
PLL VCC
VDD
X1 75kHz
XO
XI
MO/ST
ST IND
BAND
IF
LP OUT
LW-L
MW-L
INV Q11
AEP,UK MODEL
Q6
Q7(1/2)



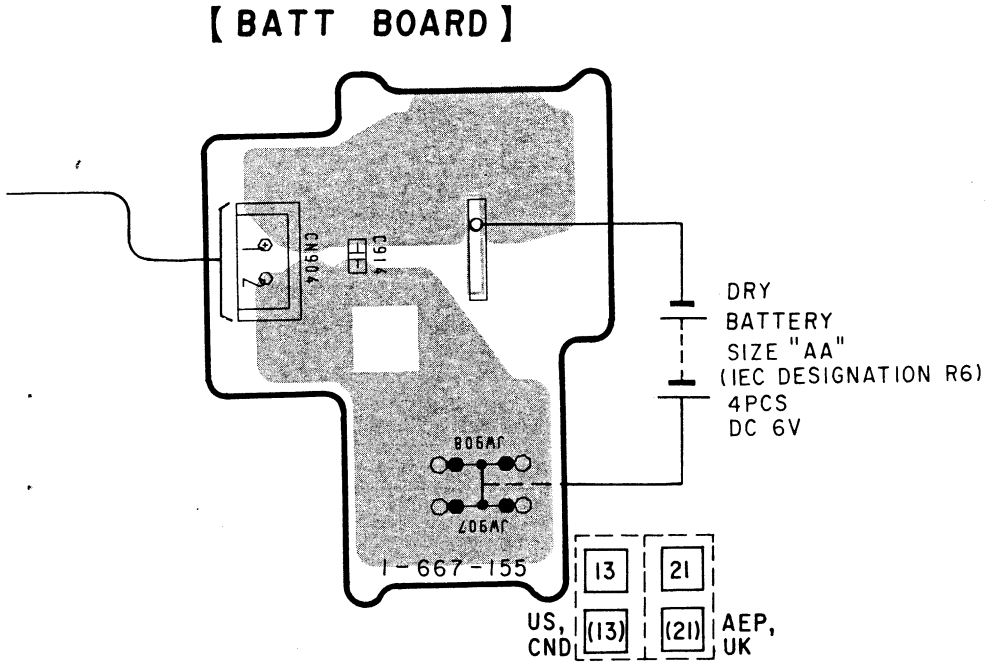
CD DIGITAL SIGNAL PROCESSOR IC703
D OUT
PCMD
BCK
LRCK
EMPH
D/A I/F
EFM DEMO.
SERIAL I/F
PWM
AL
AR
L-CH
R-CH
TO MAIN SECTION
RF
FOK
CN
SE
CLV SERVO
DAT
XLT
CLK
XRST
LOCK
MDP
DIGITAL CLV
XLON
SPOA
SUB CODE PROSSESOR
CPU I/F
XTAI
XTAO
X701
DATA
CLOCK
XLAT
SOCK
SQSO
SENS
SCOR
SYSM
CD5V
IC402
VDD
D IN
GND
OPTICAL DIGITAL OUT
MUTE Q702
CD MUTE
DA
CK
CE
CD
CD SENSE2
CD XRST
304
CD DOOR
CD MTR +
CD MTR -
TU COUNT
TU/CD DATA
TU/CD CLK
TU/CD XLAT
CD SOCK
CD SQSO
CD SENSE1
CD SCOR
TU/CD MUTE
IC801(1/3) SYSTEM CONTROL
CD SW
Q820
REG IC952
CD VCC
AEP, UK MODEL
D3
Q1
Q2
Q3
Q4
TU VCC
LW-H
MW-H
FM/AM FRONT-END IC1
ANT1 FM TELESCOPIC ANTENNA
FL1
B.P.F
L1
D1
D2
L2
FM RF I
FM RF O
FM OSC
AM RF
AM OSC
FM MIX
FM OSC
AM MIX
AM OSC
MIX OUT
OSC
ANT2 FERRITE-ROD ANTENNA
US, CND MODEL
CF1
CF2
CFT1
CF3
CF4
QUAD
VCO
VCC1
VCC2
FM IF
AM IF
FM DET
AM DET
FM/AM BUFFER
IF BUFFER
MPX
FM MPX
MUTE
MO/ST
ST IND
BAND
PLL IC2
FM
AM
PLL VCC
X1 75kHz
XO
XI
IF
DO
DI
CE
LP OUT
LW-L
MW-L
INV Q11
AEP,UK MODEL
Q7(1/2)
Q7(2/2)
Q6
Q837(1/2)
Q838
MUTE CONTROL
TO MAIN SECTION
• SIGNAL PATH
:FM
:CD
:DIGITAL OUT

7-4. PRINTED WIRING BOARD — DIODE SECTION —



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
[MD REGULATOR BOARD]
[AC INLET BOARD]
[DIODE BOARD]
[BATT BOA
AC IN
DRY BATTERY
SIZE "D"
(IEC DESIGNATION R20)
8PCS
DC 12V
RED
BLK
JW903
JW904
JW901
JW902
CN912
C915
CN905
C919
J901
US,CND
JW914
JW915
T902
AEP,UK
JW916
JW917
BLK
WHT
1-667-146
US, CND
AEP, UK
13
(13)
21
(21)
G
TO DC OUT BOARD CN412
CN907
C910
C912
Q901
R902
D906
IC901
CN908
1-668-263
16
H
TO EXT ANT BOARD
T901
POWER
TRASFORMER
GRY
BLU
RED
YEL
JW407
F902
JW408
CN906
CN901
C917
CN903
C918
R901
CN902
C916
D903
D902
C906
C907
D905
C909
C908
D904
JW909
C905
C904
C901
C903
D901
C902
F901
1-667-147
CN904
C913
1-66
B
TO MAIN BOARD CN351

	9	10	11	12


[BATT BOARD]
CN904
9
6
ES16
1-667-155
JW908
JW907
DRY
BATTERY
SIZE "AA"
(IEC DESIGNATION R6)
4PCS
DC 6V
13
21
(13)
(21)
US,
CND
AEP,
UK

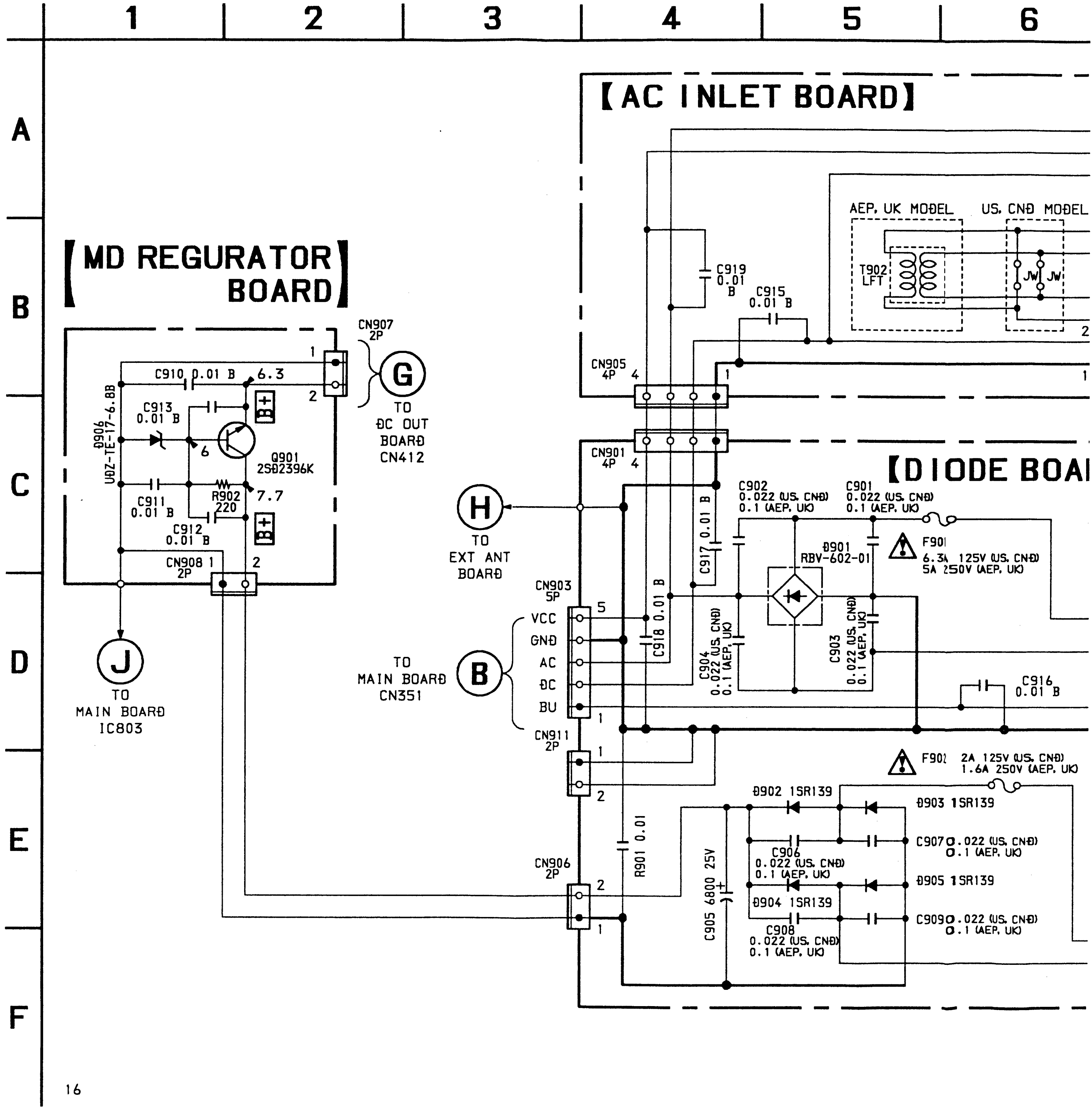
- **Semiconductor Location**

Ref. No.	Location
D901	E-6
D902	D-4
D903	D-4
D904	E-4
D905	E-3
D906	D-1
Q901	D-1

Note on Printed Wiring Boards:

- ○—— : parts extracted from the component side.
- ▨ : Pattern from the side which enables seeing.

7-5. SCHEMATIC DIAGRAM — DIODE SECTION —


1
2
3
4
5
6
A
B
C
D
E
F
[AC INLET BOARD]
[MD REGURATOR BOARD]
[DIODE BOA
AEP, UK MODEL
US, CND MODEL
T902 LFT
JW JW
C919 0.01 B
C915 0.01 B
CN905 4P
CN907 2P
G
TO
DC OUT
BOARD
CN412
C910 0.01 B
6.3
C913 0.01 B
D906 UDZ-TE-17-6.8B
Q901 2SD2396K
R902 220
7.7
C911 0.01 B
C912 0.01 B
CN908 2P
J
TO
MAIN BOARD
IC803
CN901 4P
H
TO
EXT ANT
BOARD
TO
MAIN BOARD
CN351
B
CN903 5P
VCC
GND
AC
DC
BU
CN911 2P
CN906 2P
C917 0.01 B
C918 0.01 B
C902 0.022 (US, CND) 0.1 (AEP, UK)
C901 0.022 (US, CND) 0.1 (AEP, UK)
D901 RBV-602-01
F901 6.3A 125V (US, CND) 5A 250V (AEP, UK)
C904 0.022 (US, CND) 0.1 (AEP, UK)
C903 0.022 (US, CND) 0.1 (AEP, UK)
C916 0.01 B
F902 2A 125V (US, CND) 1.6A 250V (AEP, UK)
D902 1SR139
D903 1SR139
C907 0.022 (US, CND) 0.1 (AEP, UK)
C906 0.022 (US, CND) 0.1 (AEP, UK)
D905 1SR139
D904 1SR139
C909 0.022 (US, CND) 0.1 (AEP, UK)
C908 0.022 (US, CND) 0.1 (AEP, UK)
R901 0.01
C905 6800 25V
16

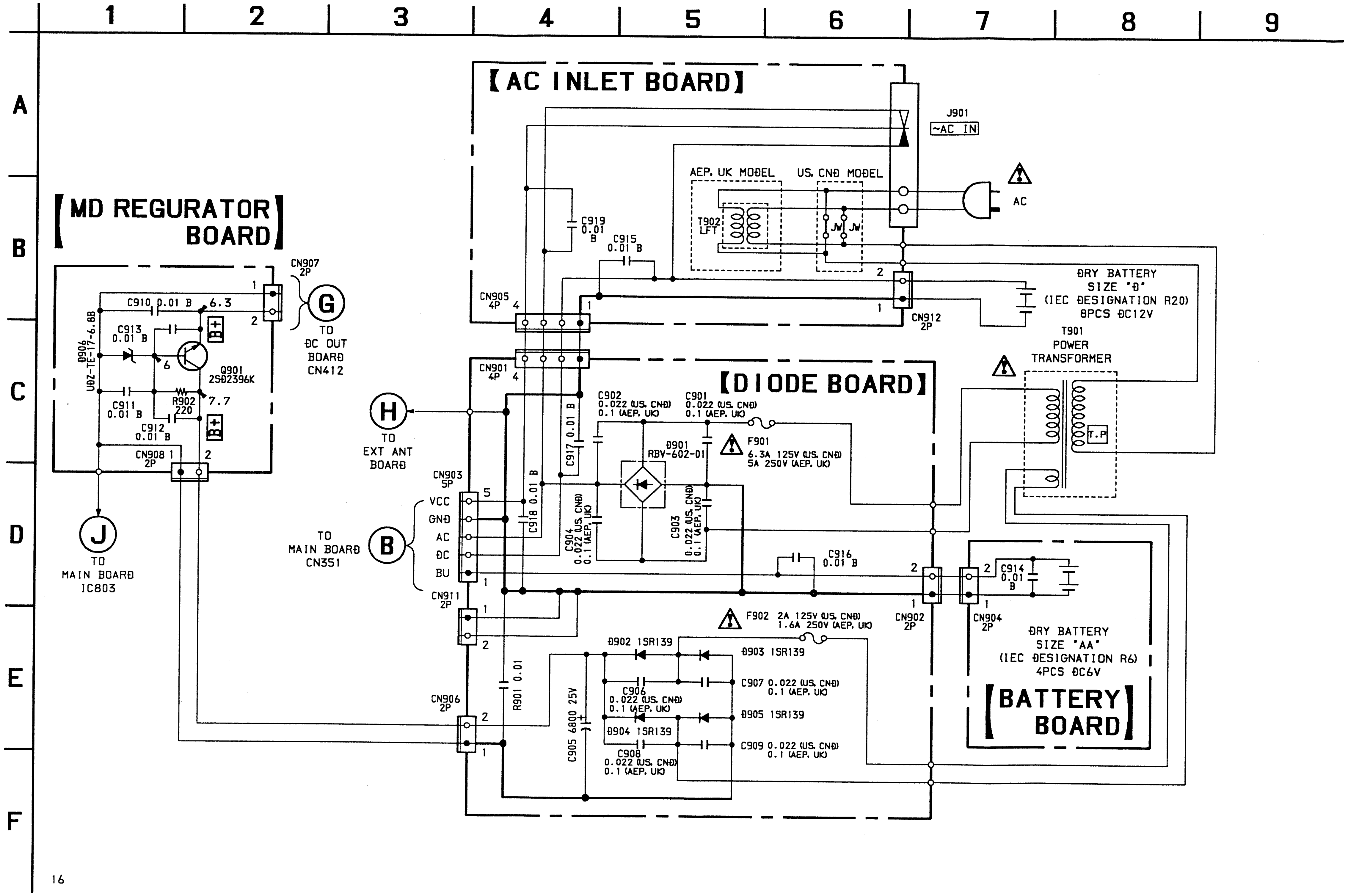
Note on Schematic Diagram

- All capacitors are in μF unles
  50 WV or less are not indic
  and tantalums.
- All resistors are in Ω and 1/4
  specified.
- ▭ : panel designation.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

11	12

7-5. SCHEMATIC DIAGRAM — DIODE SECTION —


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
【AC INLET BOARD】
J901
~AC IN
AC
AEP, UK MODEL
US, CND MODEL
T902 LFT
JW
C919 0.01 B
C915 0.01 B
CN905 4P
CN912 2P
DRY BATTERY SIZE "D" (IEC DESIGNATION R20) 8PCS DC12V
T901 POWER TRANSFORMER
T.P
【MD REGURATOR BOARD】
CN907 2P
C910 0.01 B
6.3
C913 0.01 B
D906 UDZ-TE-17-6.8B
Q901 2SD2396K
C911 0.01 B
R902 220
7.7
C912 0.01 B
CN908 2P
B+
TO DC OUT BOARD CN412
TO EXT ANT BOARD
TO MAIN BOARD CN351
TO MAIN BOARD IC803
【DIODE BOARD】
CN901 4P
C902 0.022 (US, CND) 0.1 (AEP, UK)
C901 0.022 (US, CND) 0.1 (AEP, UK)
C917 0.01 B
D901 RBV-602-01
F901 6.3A 125V (US, CND) 5A 250V (AEP, UK)
CN903 5P
VCC
GND
AC
DC
BU
C918 0.01 B
C904 0.022 (US, CND) 0.1 (AEP, UK)
C903 0.022 (US, CND) 0.1 (AEP, UK)
C916 0.01 B
CN911 2P
F902 2A 125V (US, CND) 1.6A 250V (AEP, UK)
CN902 2P
D902 1SR139
D903 1SR139
C906 0.022 (US, CND) 0.1 (AEP, UK)
C907 0.022 (US, CND) 0.1 (AEP, UK)
D905 1SR139
D904 1SR139
C908 0.022 (US, CND) 0.1 (AEP, UK)
C909 0.022 (US, CND) 0.1 (AEP, UK)
R901 0.01
C905 6800 25V
CN906 2P
CN904 2P
C914 0.01 B
DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PCS DC6V
【BATTERY BOARD】

6)

16

• Semiconductor Location

Ref. No.	Location
D901	E-6
D902	D-4
D903	D-4
D904	E-4
D905	E-3
D906	D-1
Q901	D-1

Note on Printed Wiring Boards:

- o——— : parts extracted from the component side.
- ▨ : Pattern from the side which enables seeing.

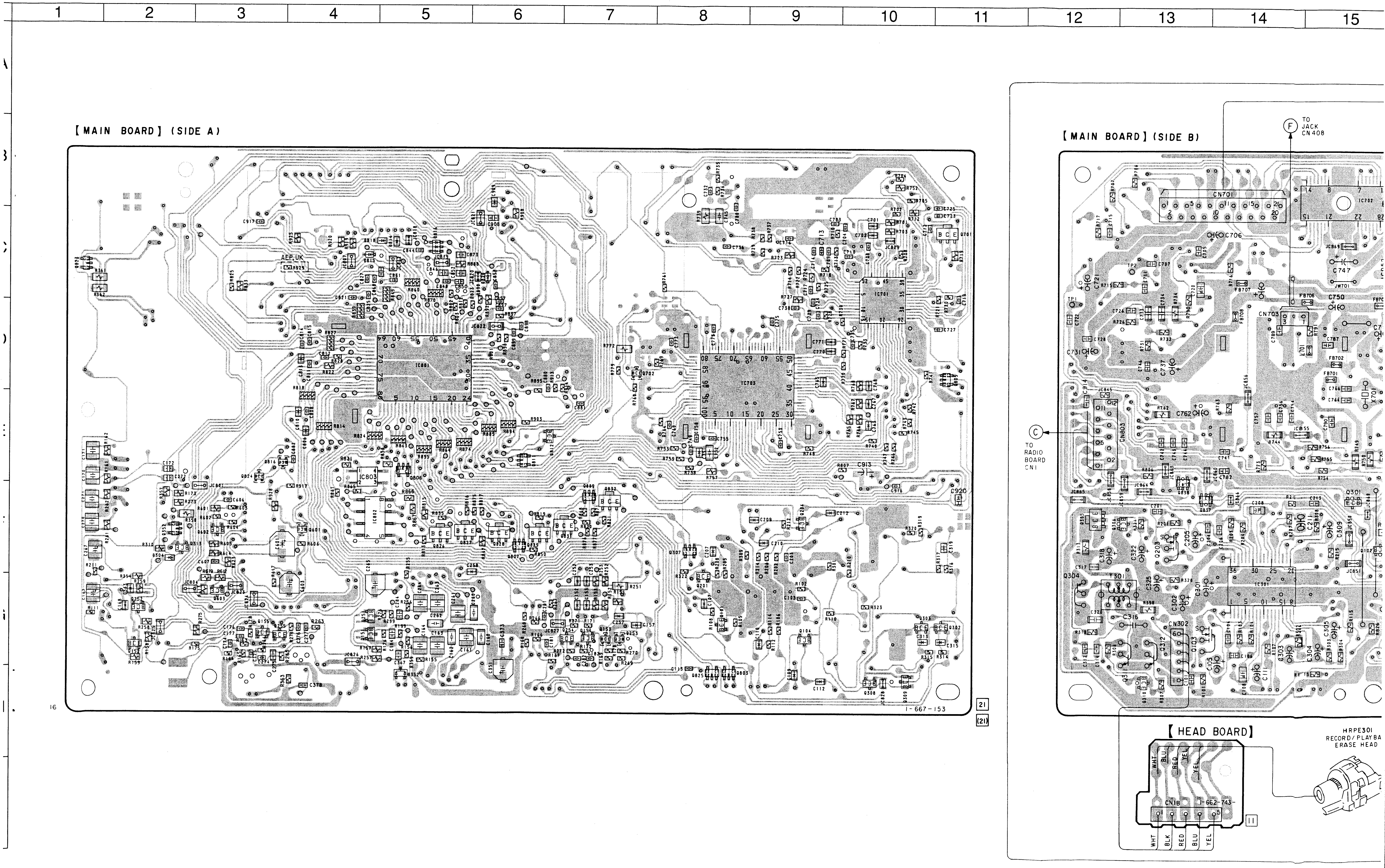
Note on Schematic Diagram:

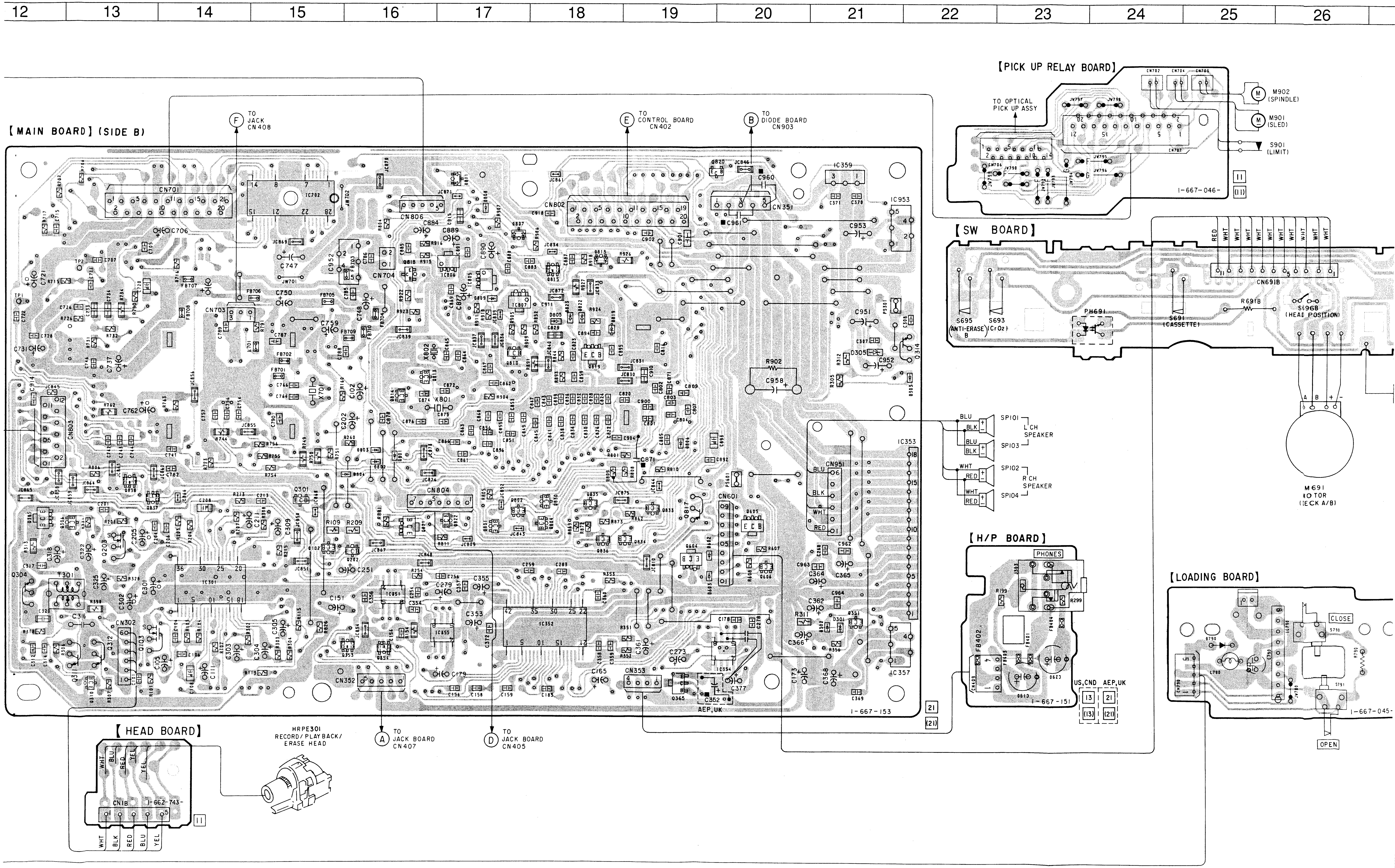
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ☐ : panel designation.

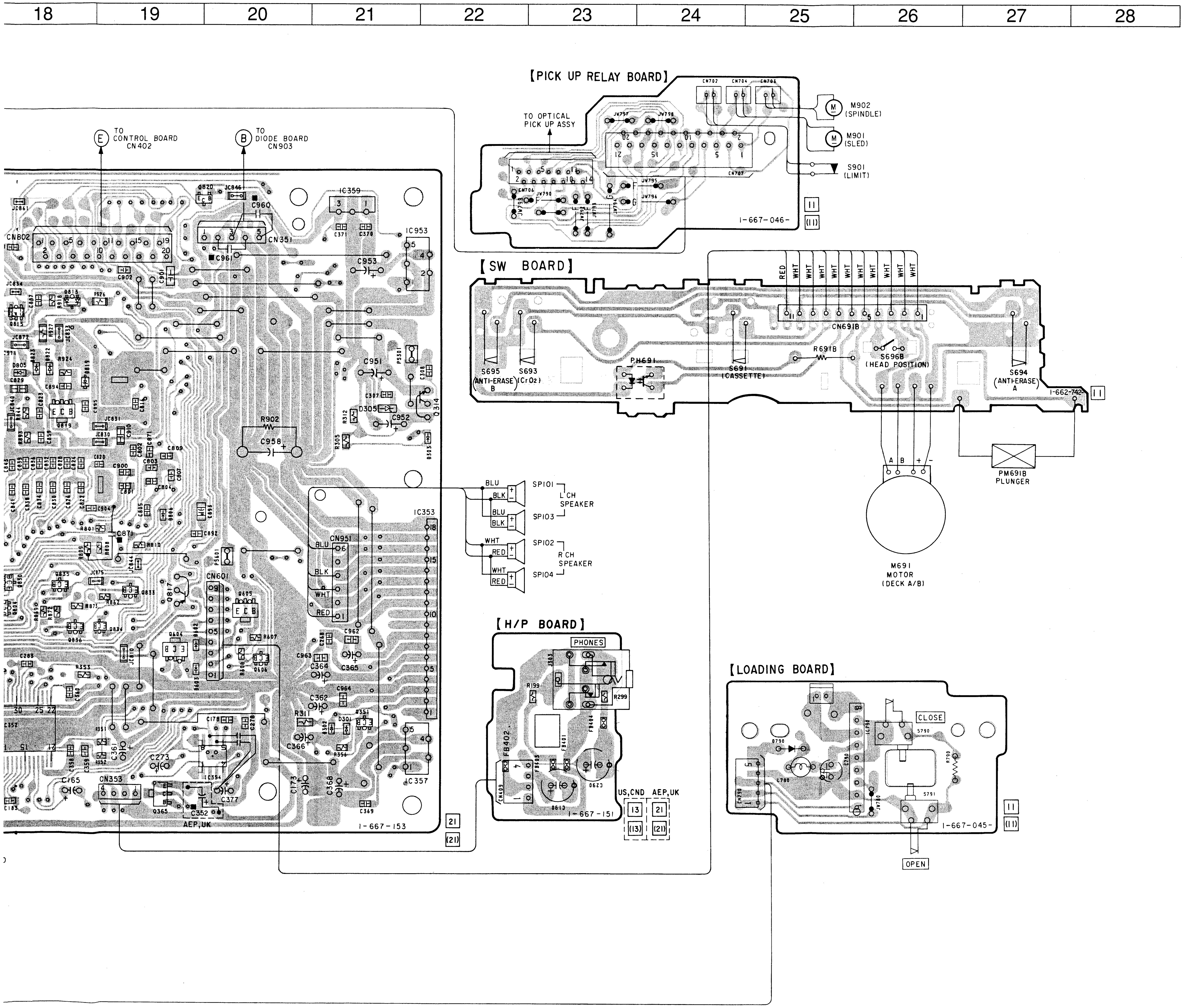
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages and waveforms are dc with respect to ground in playback mode.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  CND : Canadian model.

6. PRINTED WIRING BOARD — MAIN SECTION —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
【MAIN BOARD】(SIDE A)
IC801
IC803
IC802
IC703
IC701
AEP,UK
C913
C920
1-667-153
21
(21)
16
【MAIN BOARD】(SIDE B)
F
TO JACK CN408
CN701
IC702
C706
C747
JW701
C750
CN703
FB706
FB707
FB708
FB701
FB702
C731
C737
C762
CN803
C
TO RADIO BOARD CN1
IC301
T301
CN302
Q301
Q304
C309
C316
【HEAD BOARD】
HRPE301
RECORD/PLAYBA
ERASE HEAD
WHT
BLU
RED
YEL
CN18
1-662-743-
11
WHT
BLK
RED
BLU
YEL


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
【MAIN BOARD】(SIDE B)
【PICK UP RELAY BOARD】
【SW BOARD】
【H/P BOARD】
【LOADING BOARD】
【HEAD BOARD】
Ⓕ TO JACK CN408
Ⓔ TO CONTROL BOARD CN402
Ⓑ TO DIODE BOARD CN903
Ⓐ TO JACK BOARD CN407
Ⓓ TO JACK BOARD CN405
TO OPTICAL PICK UP ASSY
M902 (SPINDLE)
M901 (SLED)
S901 (LIMIT)
1-667-046-
1-667-153
1-667-151
1-667-045-
1-662-743-
SP101 L CH SPEAKER
SP103
SP102 R CH SPEAKER
SP104
BLU
BLK
WHT
RED
YEL
S695 (ANTI-ERASE) B
S693 (CrO2)
S691 (CASSETTE)
PH691
R691B
S696B (HEAD POSITION)
CN691B
M691 MOTOR (DECK A/B)
PHONES
US,CND
AEP,UK
CLOSE
OPEN
HRPE301 RECORD/PLAYBACK/ERASE HEAD
CN701
CN702
CN703
CN704
CN806
CN802
CN803
CN804
CN351
CN352
CN353
CN601
CN951
CN302
CN18
IC702
IC301
IC352
IC353
IC357
IC359
IC953
IC952
X801
X701
T301


18
19
20
21
22
23
24
25
26
27
28
[PICK UP RELAY BOARD]
TO OPTICAL PICK UP ASSY
M902 (SPINDLE)
M901 (SLED)
S901 (LIMIT)
1-667-046-
11
(11)
E TO CONTROL BOARD CN402
B TO DIODE BOARD CN903
IC359
IC953
CN351
C960
C961
C953
C951
C952
D305
Q314
R902
C958
[SW BOARD]
RED
WHT
CN691B
R691B
S696B (HEAD POSITION)
S695 (ANTI-ERASE) B
S693 (CrO2)
PH691
S691 (CASSETTE)
S694 (ANTI-ERASE) A
1-662-742-
PM691B PLUNGER
M691 MOTOR (DECK A/B)
A B + -
BLU
BLK
WHT
RED
SP101 L CH SPEAKER
SP103
SP102 R CH SPEAKER
SP104
IC353
CN951
CN601
IC357
IC354
CN353
C377
C352
AEP,UK
1-667-153
21
(21)
[H/P BOARD]
PHONES
R199
R299
FB402
FB401
1-667-151
US,CND
AEP,UK
13
(13)
[LOADING BOARD]
CLOSE
OPEN
S790
S791
D790
1-667-045-
CN802
CN801

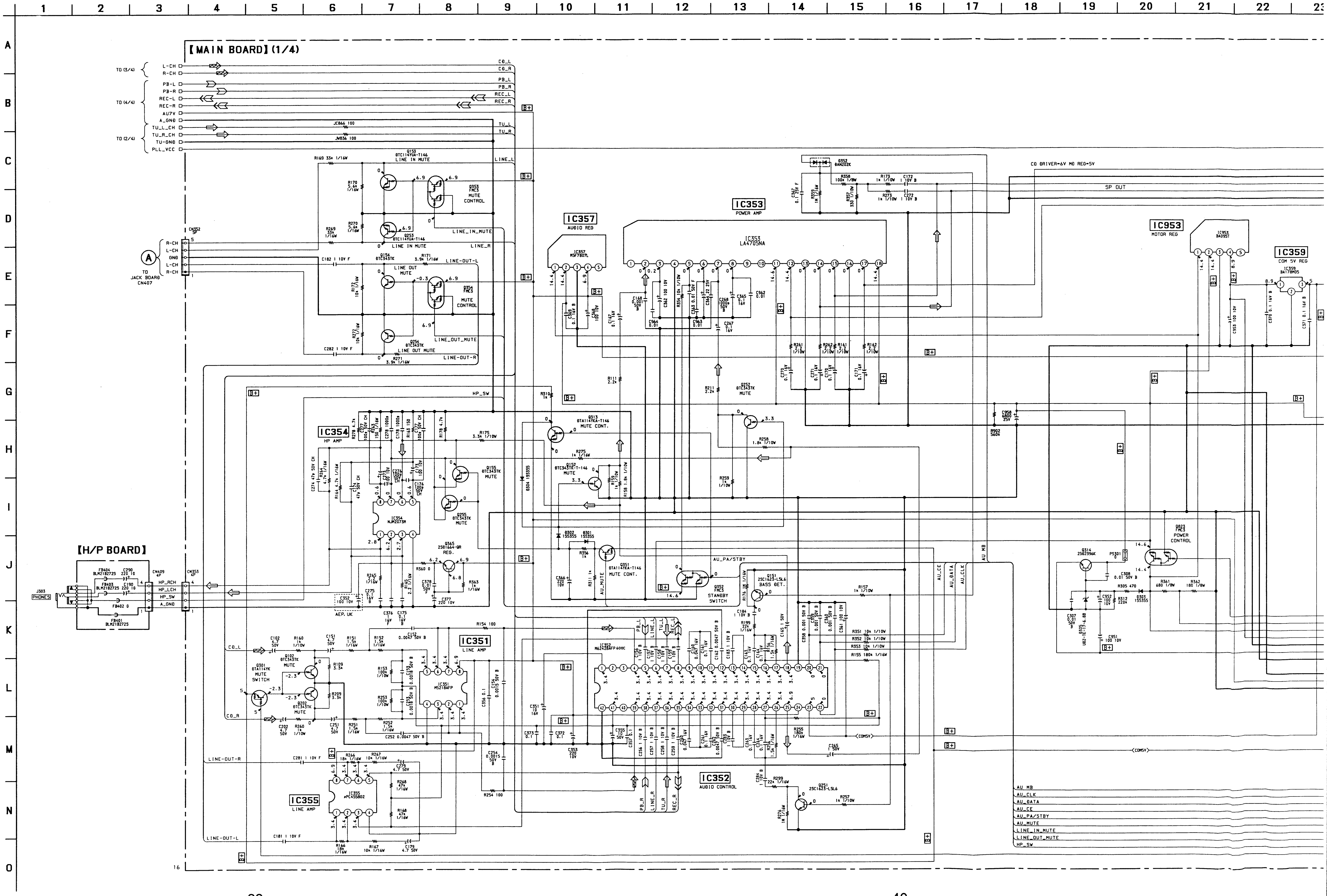
- **Semiconductor Location**

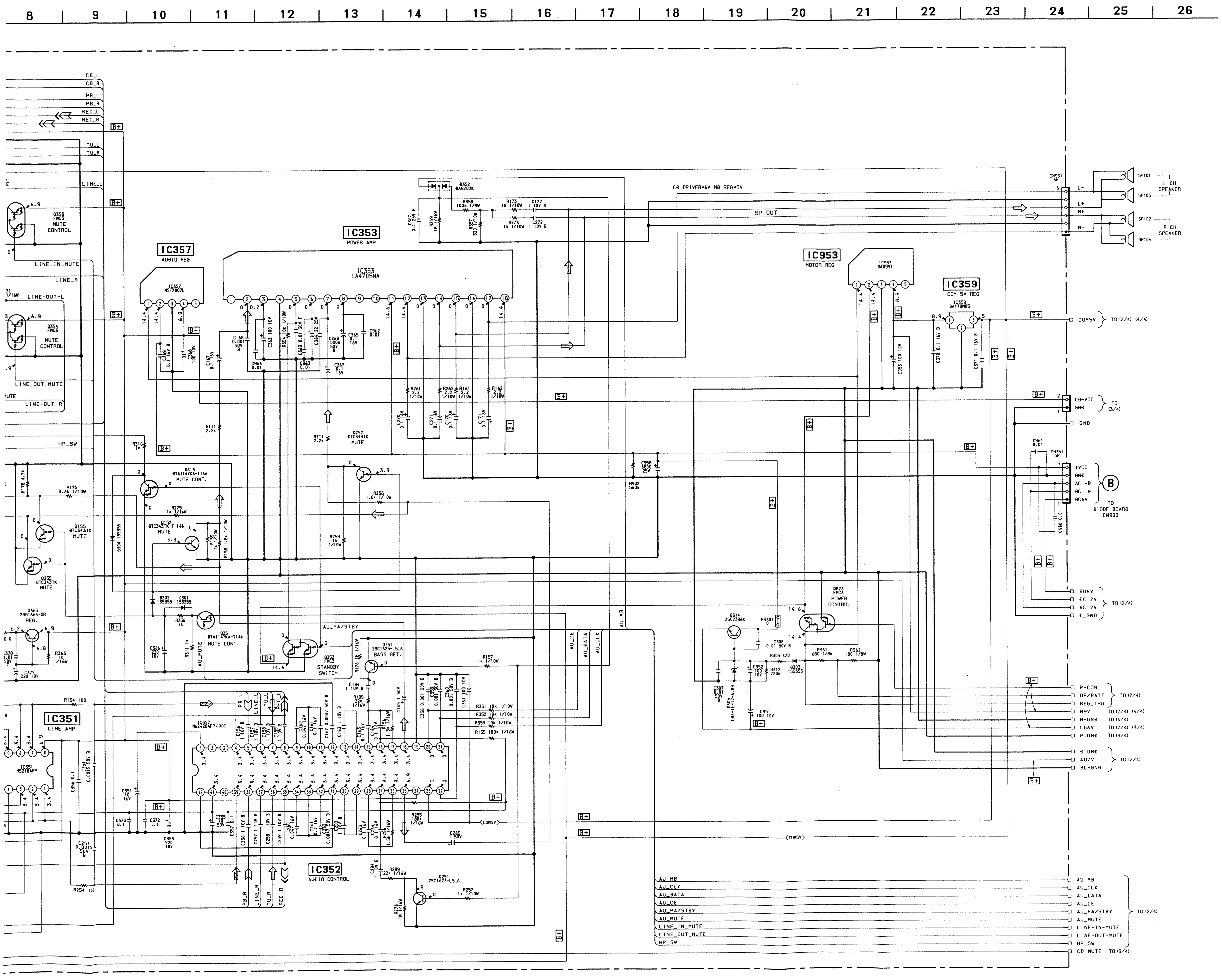
Ref. No.	Location	Ref. No.	Location
D301	G-21	Q301	F-15
D302	G-21	Q302	G-11
D303	D-21	Q303	G-10
D304	F-2	Q304	G-12
D305	D-21	Q305	F-12
D352	H-5	Q306	F-12
D602	F-19	Q307	F-8
D603	F-19	Q308	H-10
D801	E-16	Q309	H-10
D802	E-16	Q310	H-13
D803	E-16	Q311	G-13
D804	E-15	Q312	G-13
D805	D-18	Q313	F-2
D806	C-6	Q314	D-21
D807	C-17	Q351	G-21
D808	B-17	Q352	F-2
D809	C-17	Q353	G-15
D811	D-17	Q354	G-16
D815	C-4	Q356	H-3
D813	C-18	Q601	F-4
D814	C-5	Q602	F-3
D816	C-4	Q603	G-3
D818	C-5	Q604	F-19
D819	D-18	Q605	F-20
D820	C-6	Q606	F-20
D822	D-18	Q701	C-11
D823	D-18	Q702	D-7
		Q801	F-17
IC301	G-14	Q802	F-17
IC351	G-11	Q803	H-8
IC352	G-18	Q804	F-18
IC353	E-21	Q805	D-11
IC354	G-20	Q806	E-5
IC355	G-16	Q807	F-6
IC357	G-21	Q809	F-7
IC359	B-21	Q810	D-17
IC701	C-10	Q811	E-6
IC702	B-15	Q812	E-6
IC703	D-8	Q813	D-16
IC801	D-5	Q814	D-16
IC803	B-26	Q815	C-18
IC805	C-17	Q816	E-3
IC806	C-17	Q817	F-18
IC807	D-17	Q818	C-16
IC952	C-15	Q819	D-18
IC953	C-21	Q820	B-19
		Q821	F-16
Q101	G-8	Q822	F-17
Q102	F-15	Q823	C-1
Q103	F-16	Q824	E-3
Q104	G-9	Q825	H-8
Q151	G-4	Q826	F-5
Q152	G-2	Q827	F-5
Q153	G-7	Q828	F-6
Q154	G-7	Q829	F-6
Q155	G-3	Q830	F-18
Q201	F-8	Q831	F-7
Q202	F-16	Q832	F-7
Q203	F-13	Q833	F-19
Q204	F-9	Q834	F-18
Q251	G-4	Q835	F-18
Q252	G-2	Q836	F-18
Q253	G-7	Q837	F-13
Q254	G-7	Q838	E-13
Q255	G-3		

Note on Printed Wiring Boards:

- o——— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▨ : Pattern from the side which enables seeing.

7-7. SCHEMATIC DIAGRAM — MAIN SECTION (1/4) —

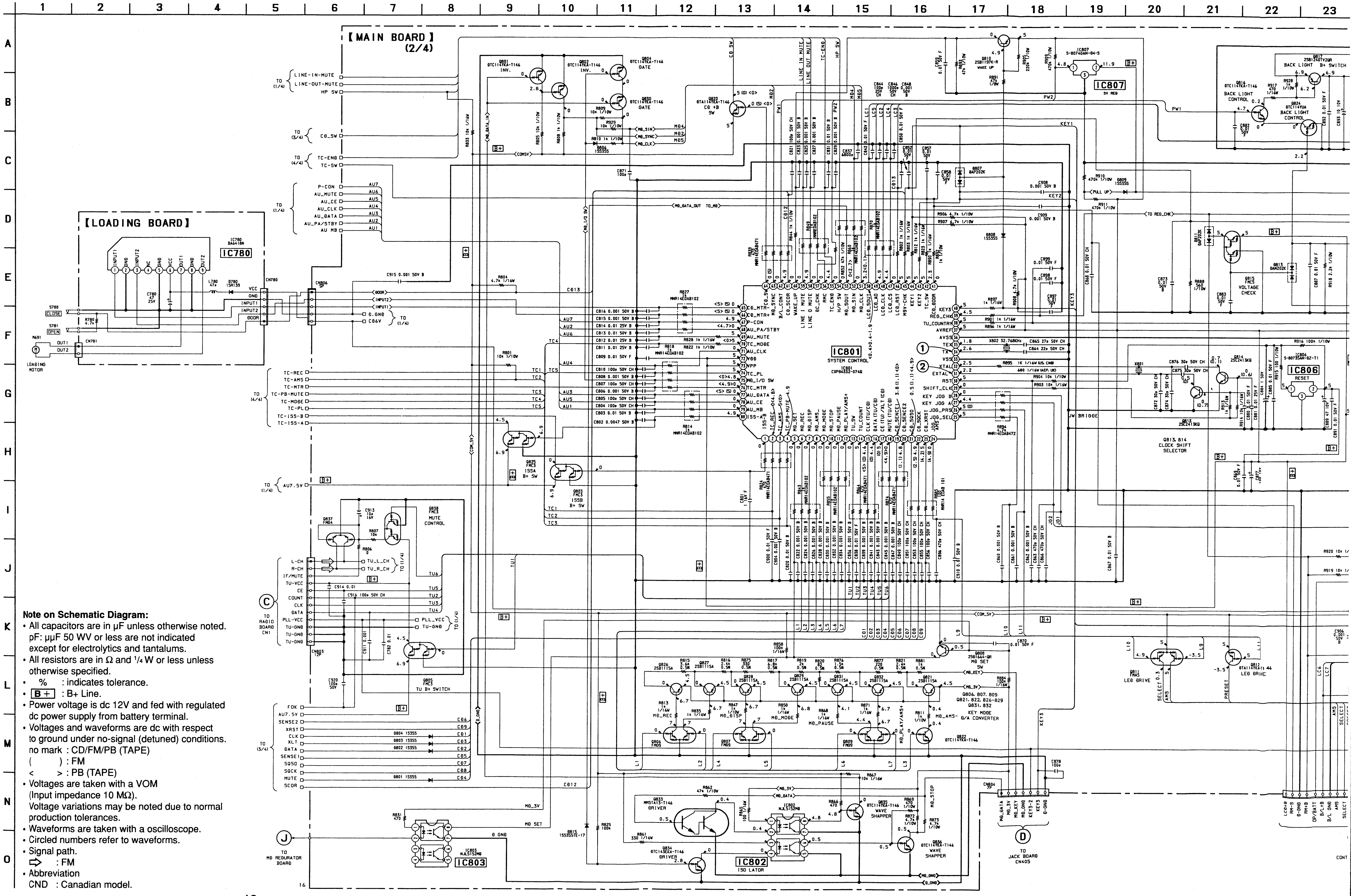

【MAIN BOARD】(1/4)
【H/P BOARD】
IC353
POWER AMP
IC353
LA4705NA
IC357
AUDIO REG
IC357
MSF7807L
IC953
MOTOR REG
IC953
BA09ST
IC359
COM 5V REG
IC354
HP AMP
IC354
NJM2073M
IC351
LINE AMP
IC351
M5218AFP
IC352
AUDIO CONTROL
IC352
M62428AFP
IC355
LINE AMP
IC355
μPC4558OZ
Q153
DTC114YUA-T146
LINE IN MUTE
Q353
FMC3
MUTE CONTROL
Q253
DTC114YUA-T146
LINE IN MUTE
Q154
DTC343TK
LINE OUT MUTE
Q354
FMC3
MUTE CONTROL
Q254
DTC343TK
LINE OUT MUTE
Q155
DTC343TK
MUTE
Q255
DTC343TK
MUTE
Q365
2SD1664-QR
REG.
Q313
DTA114TKA-T146
MUTE CONT.
Q152
DTC343TK-T-146
MUTE
Q252
DTC343TK
MUTE
Q351
DTA114TKA-T146
MUTE CONT.
Q352
FMC3
STANDBY SWITCH
Q151
2SC1623-L5L6
BASS DET.
Q251
2SC1623-L5L6
Q301
DTA114YK
MUTE SWITCH
Q102
DTC343TK
MUTE
Q202
DTC343TK
MUTE
Q314
2SC2396K
Q923
FMC3
POWER CONTROL
D352
DAN202K
D324 1SS355
D302 1SS355
D301 1SS355
TO (3/4)
TO (4/4)
TO (2/4)
L-CH
R-CH
PB-L
PB-R
REC-L
REC-R
AU7V
A_GND
TU_L_CH
TU_R_CH
TU-GND
PLL_VCC
CD_L
CD_R
PB_L
PB_R
REC_L
REC_R
TU_L
TU_R
LINE_L
LINE_IN_MUTE
LINE_R
LINE-OUT-L
LINE_OUT_MUTE
LINE-OUT-R
HP_SW
A
TO JACK BOARD CN407
CN352
CN409 4P
CN353 4P
HP_RCH
HP_LCH
HP_SW
A_GND
J303 PHONES
FB404 BLM21B2725
FB403 BLM21B2725
FB402 0
FB401 BLM21B2725
AEP, UK
AU_PA/STBY
AU_MUTE
AU_CE
AU_DATA
AU_CLK
AU MB
CD DRIVER-6V MD REG-5V
SP OUT
PS301
<COM5V>
AU MB
AU_CLK
AU_DATA
AU_CE
AU_PA/STBY
AU_MUTE
LINE_IN_MUTE
LINE_OUT_MUTE
HP_SW
B+
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O


8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
CD_L
CD_R
PB_L
PB_R
REC_L
REC_R
TU_L
TU_R
LINE_L
LINE_IN_MUTE
LINE_R
LINE-OUT-L
LINE_OUT_MUTE
LINE-OUT-R
HP_SW
Q353 FMC5 MUTE CONTROL
Q354 FMC5 MUTE CONTROL
IC357 AUDIO REG
IC357 MSF7807L
IC353 POWER AMP
IC353 LA4705NA
Q352 BAN202K
CD DRIVER=6V MD REG=5V
SP OUT
CN951 6P
L-
L+
R+
R-
SP101
SP103
L CH SPEAKER
SP102
SP104
R CH SPEAKER
IC953 MOTOR REG
IC953 BA09ST
IC359 COM 5V REG
IC359 BA178M05
COM5V
TO (2/4) (4/4)
CD-VCC
GND
TO (3/4)
CN351 5P
+VCC
AC +B
DC IN
DC6V
TO DIODE BOARD CN903
B
Q252 DTC343TK MUTE
Q313 DTA114YKA-T146 MUTE CONT.
Q155 DTC343TK MUTE
Q255 DTC343TK MUTE
Q365 2SB1664-QR REG.
Q351 DTA114YKA-T146 MUTE CONT.
Q352 FMC5 STANDBY SWITCH
Q151 2SC1623-L5L6 BASS DET.
Q923 FMC5 POWER CONTROL
Q314 2SD2396K
BU6V
DC12V
AC12V
D_GND
TO (2/4)
AU_PA/STBY
AU_MUTE
AU_CE
AU_DATA
AU_CLK
AU MB
P-CON
OP/BATT
REG_TRG
M9V
M-GND
CD6V
P.GND
TO (2/4)
TO (2/4) (4/4)
TO (4/4)
TO (2/4) (3/4)
TO (3/4)
D.GND
AU7V
BL-GND
IC351 LINE AMP
IC351 M5218AFP
IC352 M62428FP
IC352 AUDIO CONTROL
Q251 2SC1623-L5L6
PB_R
LINE_R
TU_R
REC_R
PB_L
LINE_L
TU_L
REC_L
COM5V
AU MB
AU_CLK
AU_DATA
AU_CE
AU_PA/STBY
AU_MUTE
LINE-IN-MUTE
LINE-OUT-MUTE
HP_SW
CD MUTE TO (3/4)
TO (2/4)
B+

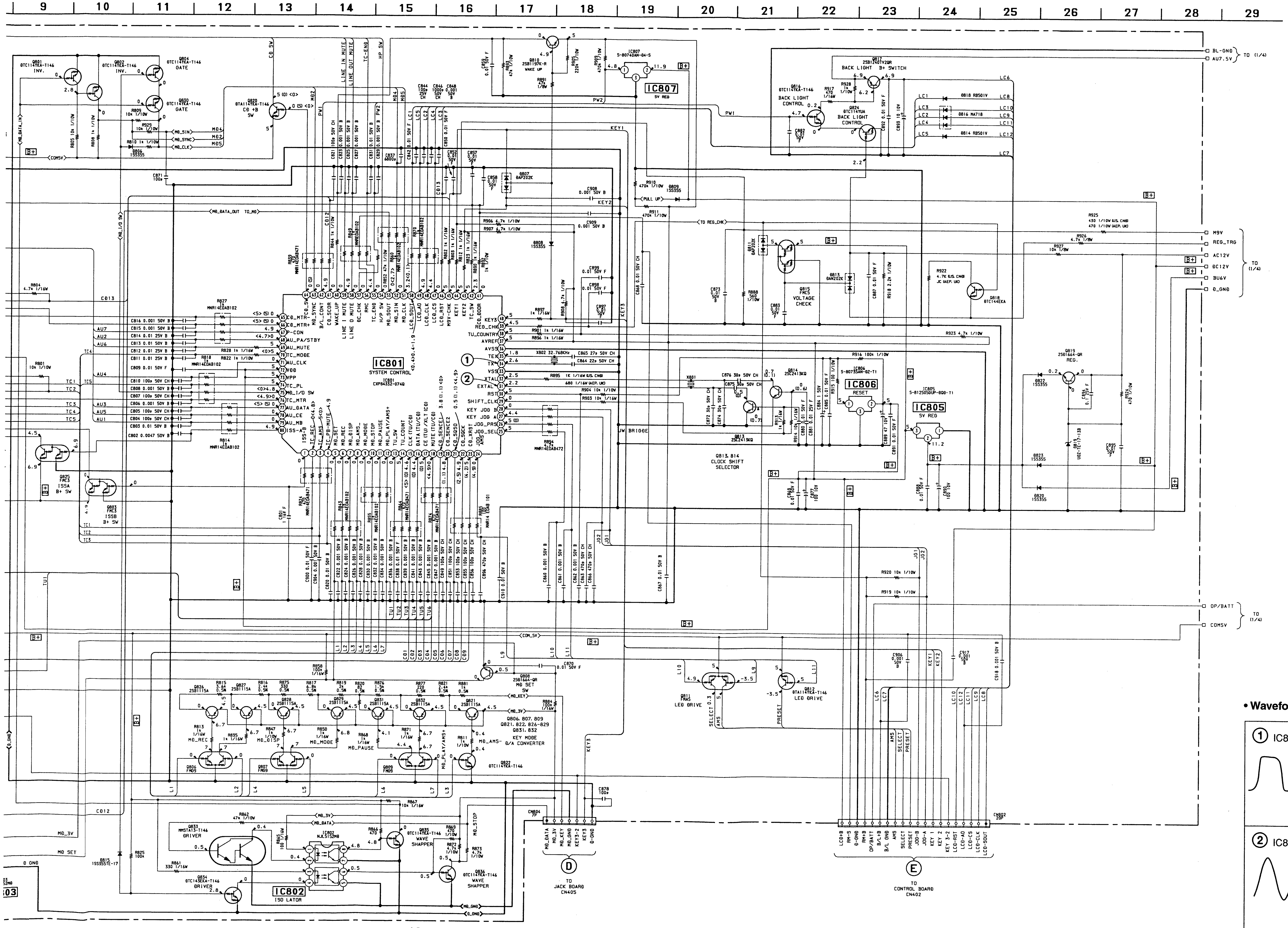
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ☐ : panel designation.
- B+ : B+ Line.
- Power voltage is dc 12 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⊐ : PB
  ⊐» : REC
  ⇨ : CD
- Abbreviation
  CND : Canadian model.

7-8. SCHEMATIC DIAGRAM — MAIN SECTION (2/4) —

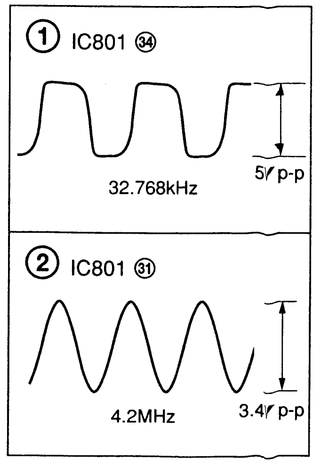

【MAIN BOARD】 (2/4)
【LOADING BOARD】
IC780
BA6418N
IC801
SYSTEM CONTROL
CXP84332-074Q
IC802
ISO LATOR
IC803
IC806
RESET
IC807
5V REG
Q801 INV.
Q802 INV.
Q804 GATE
Q830 GATE
Q820 CD +B SW
Q810 WAKE UP
Q816 BACK LIGHT CONTROL
Q824 BACK LIGHT CONTROL
Q817 BACK LIGHT B+ SWITCH
Q815 VOLTAGE CHECK
Q813, 814 CLOCK SHIFT SELECTOR
Q825 1SSA B+ SW
Q803 1SSB B+ SW
Q838 MUTE CONTROL
Q805 TU B+ SWITCH
Q808 MD SET SW
Q806, 807, 809, Q821, 822, 826-829, Q831, 832 KEY MODE A/D CONVERTER
Q811 LED DRIVE
Q812 LED DRIVE
Q833 DRIVER
Q834 DRIVER
Q835 WAVE SHAPPER
Q836 WAVE SHAPPER
M491 LOADING MOTOR
S780 CLOSE
S781 OPEN
CN780
CN806
CN803
CN804
TO (1/4)
TO (3/4)
TO (4/4)
C TO RADIO BOARD CN1
J TO MD REGURATOR BOARD
D TO JACK BOARD CN405
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A B C D E F G H I J K L M N O

Note on Schematic Diagram:
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD/FM/PB (TAPE)
  ( ) : FM
  < > : PB (TAPE)
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
- Abbreviation
  CND : Canadian model.



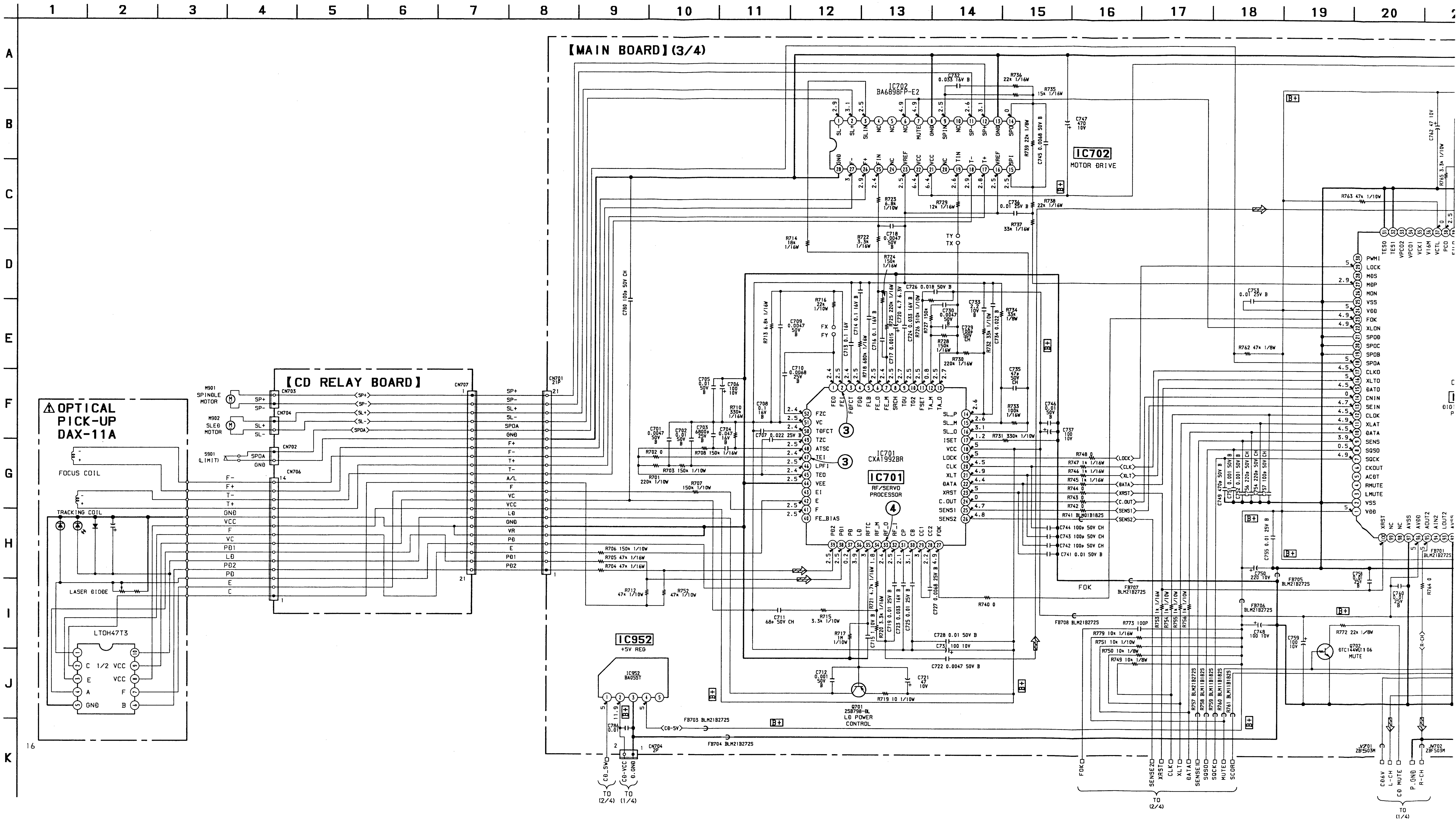
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
IC801
SYSTEM CONTROL
IC801
CXP84332-074Q
IC807
5V REG
IC806
RESET
IC805
5V REG
IC802
ISO LATOR
Q801 DTC114YKA-T146 INV.
Q802 DTC114YKA-T146 INV.
Q804 DTC114YKA-T146 GATE
Q830 DTC114YKA-T146 GATE
Q820 DTA114YKA-T146 CD +B SW
Q810 2SB1197K-R WAKE UP
Q817 2SB1240TV2QR BACK LIGHT B+ SWITCH
Q816 DTC114YKA-T146 BACK LIGHT CONTROL
Q824 DTC114YUA BACK LIGHT CONTROL
Q815 FMC5 VOLTAGE CHECK
Q818 DTC144EKA
Q819 2SD1664-QR REG.
Q813, 814 CLOCK SHIFT SELECTOR
Q825 FMC3 ISSA B+ SW
Q803 FMC3 ISSB B+ SW
Q808 2SD1664-QR MD SET SW
Q806, 807, 809 Q821, 822, 826-829 Q831, 832 KEY MODE A/D CONVERTER
Q811 FMA5 LED DRIVE
Q812 DTA114YKA-T146 LED DRIVE
Q833 MMSTA13-T146 DRIVER
Q834 DTC143EKA-T146 DRIVER
Q835 DTC114YKA-T146 WAVE SHAPPER
Q836 DTC114YKA-T146 WAVE SHAPPER
X801 32.768KHz
JW BRIDGE
BL-GND
AU7.5V
TO (1/4)
M9V
REG_TRG
AC12V
DC12V
BU6V
D_GND
OP/BATT
COM5V
CN804 7P
MD_DATA
MD_3V
MD_KEY
MD_GND
KEY3-2
KEYS
D_GND
TO JACK BOARD CN405
CN802 20P
TO CONTROL BOARD CN402
MD_3V
MD SET
D GND
MD_REC
MD_DISP
MD_MODE
MD_PAUSE
MD_PLAY/AMS+
MD_AMS-
MD_STOP

• Waveform

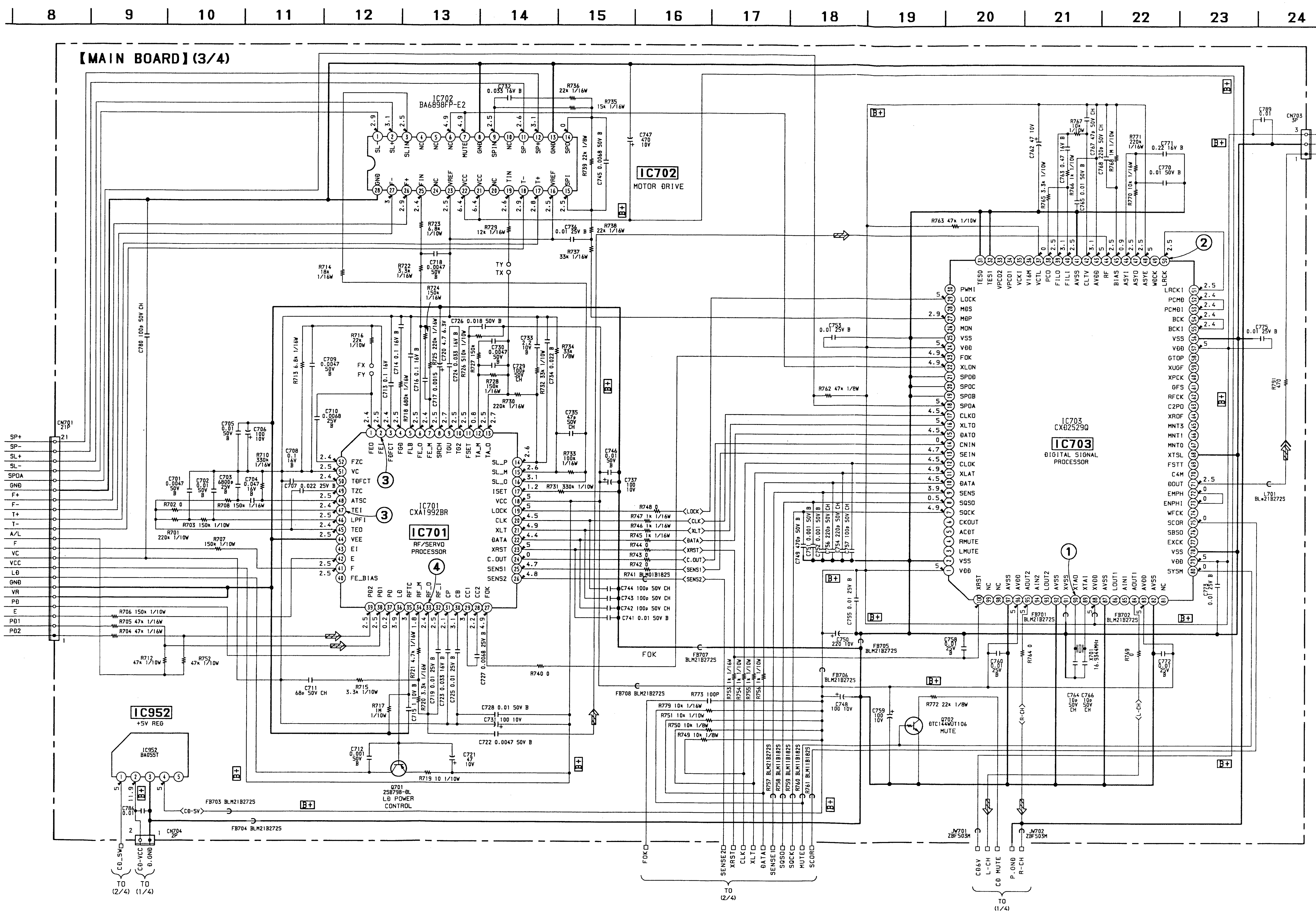


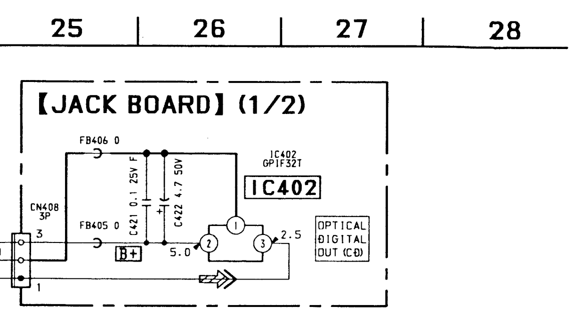
① IC801 ㉞
32.768kHz
5V p-p
② IC801 ㉛
4.2MHz
3.4V p-p

7-9. SCHEMATIC DIAGRAM — MAIN SECTION (3/4) —



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
【MAIN BOARD】(3/4)
【CD RELAY BOARD】
⚠OPTICAL PICK-UP DAX-11A
FOCUS COIL
TRACKING COIL
LASER DIODE
LTOH47T3
C 1/2 VCC
E VCC
A F
GND B
M901 SPINDLE MOTOR
M902 SLED MOTOR
S901 (LIMIT)
SP+
SP-
SL+
SL-
SPDA
GND
F-
F+
T-
T+
VCC
F
VC
PD1
LD
PD2
PD
E
C
A/L
VR
CN701 21P
CN702
CN703
CN704
CN706
CN707
IC702 BA6898FP-E2
IC702 MOTOR DRIVE
IC701 CXA1992BR
IC701 RF/SERVO PROCESSOR
IC952 +5V REG
IC952 BA05ST
Q701 2SB798-DL LD POWER CONTROL
Q702 DTC144WD1 06 MUTE
FZC
VC
TDFCT
TZC
ATSC
TEI
LPFI
TEO
VEE
EI
E
F
FE_BIAS
SL_P
SL_M
SL_O
ISET
VCC
LOCK
CLK
XLT
DATA
XRST
C.OUT
SENS1
SENS2
PWMI
MDS
MDP
MON
VSS
VDD
FOK
XLON
SPDD
SPDC
SPDB
SPDA
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
XLAT
SENS
SQSO
SQCK
CKOUT
ACDT
RMUTE
LMUTE
TY
TX
FX
FY
FB703 BLM21B272S
FB704 BLM21B272S
FB705 BLM21B272S
FB706 BLM21B272S
FB707 BLM21B272S
FB708 BLM21B272S
CN704 2P
CD_5V
CD-VCC
D.GND
TO (2/4)
TO (1/4)
FOK
SENSE2
XRST
CLK
XLT
DATA
SENSE1
SQSO
SQCK
SCOR
CD6V
L-CH
CD MUTE
P.GND
R-CH
JW701 ZBF503M
JW702 ZBF503M
B+


8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
【MAIN BOARD】(3/4)
IC702 BA6898FP-E2
IC702 MOTOR DRIVE
IC701 CXA1992BR
IC701 RF/SERVO PROCESSOR
IC703 CXD2529Q
IC703 DIGITAL SIGNAL PROCESSOR
IC952 +5V REG
IC952 BA05ST
Q701 2SB798-DL LD POWER CONTROL
Q702 DTC144WUT106 MUTE
CN701 21P
CN703 3P
CN704 2P
JW701 ZBF503M
JW702 ZBF503M
X701 16.9344MHz
B+
FOK
TO (2/4)
TO (1/4)
SENSE2
XRST
CLK
XLT
DATA
SENSE
SQSO
SQCK
MUTE
SCOR
CD6V
L-CH
CD MUTE
P.GND
R-CH
CD-5V
CD-VCC
D.GND


24
25
26
27
28
【JACK BOARD】(1/2)
IC402 GP1F32T
IC402
OPTICAL DIGITAL OUT (CD)
CN408 3P
FB406 0
FB405 0
VCC
D_GND
D_OUT

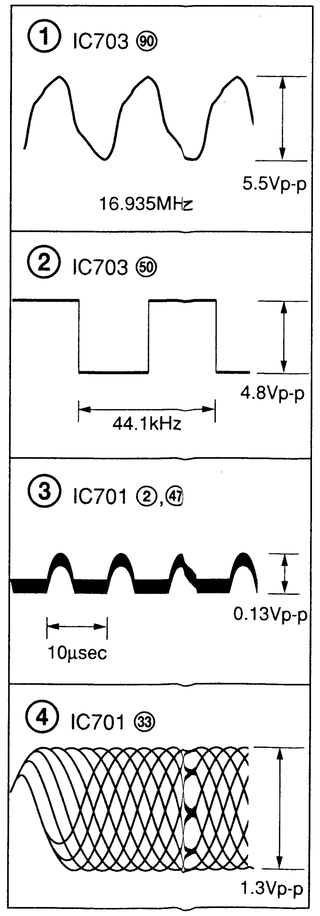
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- ☐ : panel designation.

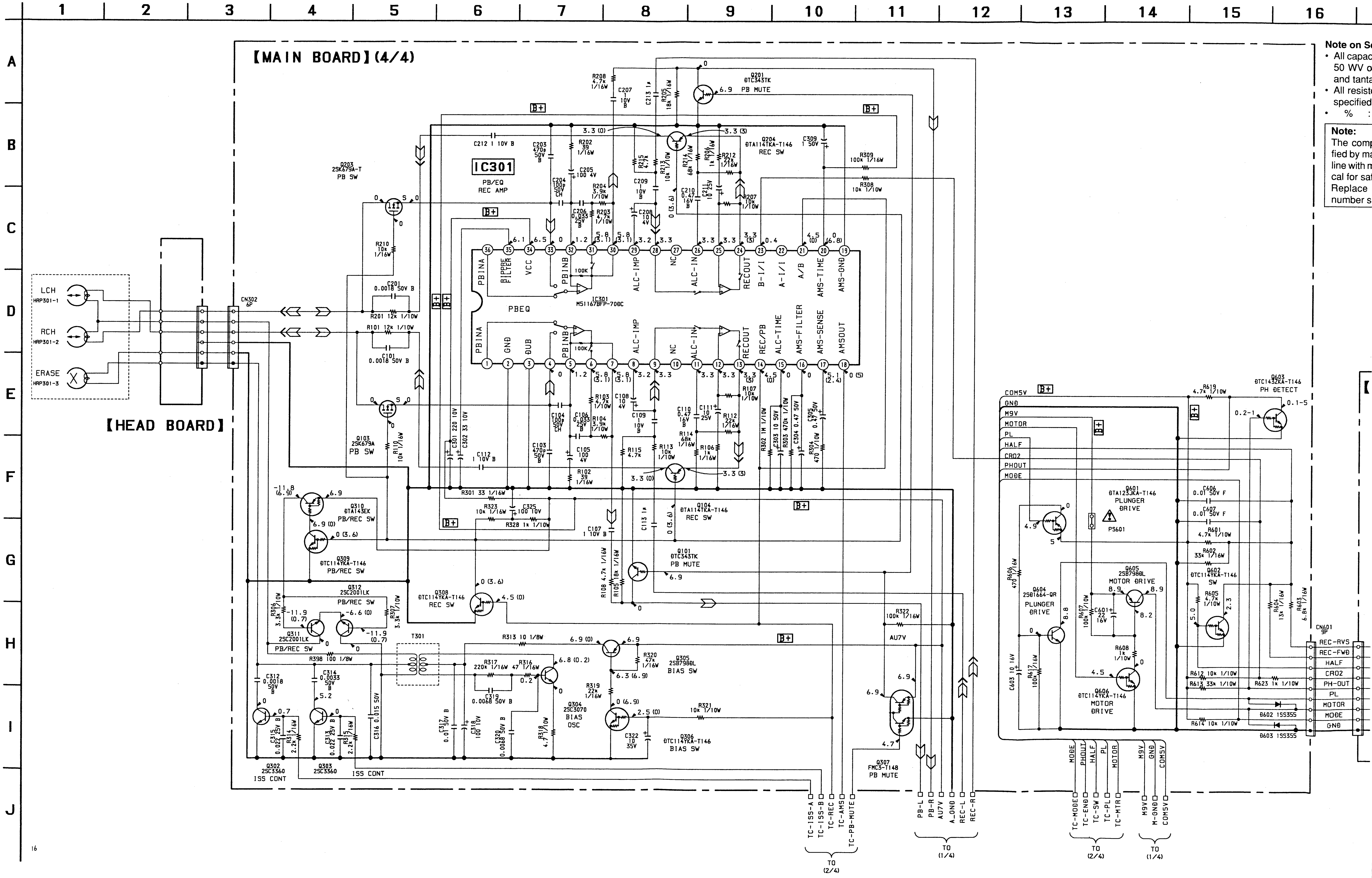
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇛ : digital out

• Waveform



7-10. SCHEMATIC DIAGRAM — MAIN SECTION (4/4) —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
【MAIN BOARD】(4/4)
【HEAD BOARD】
LCH
HRP301-1
RCH
HRP301-2
ERASE
HRP301-3
CN302
6P
IC301
PB/EQ
REC AMP
IC301
M51167BFP-706C
PBINA
BIPPRE FILTER
VCC
PBINB
ALC-IMP
NC
ALC-IN
RECOUT
B-I/I
A-I/I
A/B
AMS-TIME
AMS-GND
PBEQ
GND
DUB
REC/PB
ALC-TIME
AMS-FILTER
AMS-SENSE
AMSOUT
Q203
2SK679A-T
PB SW
Q103
2SK679A
PB SW
Q201
DTC343TK
PB MUTE
Q204
DTA114TKA-T146
REC SW
Q104
DTA114TKA-T146
REC SW
Q101
DTC343TK
PB MUTE
Q310
DTA143EK
PB/REC SW
Q309
DTC114YKA-T146
PB/REC SW
Q312
2SC2001LK
PB/REC SW
Q311
2SC2001LK
PB/REC SW
Q308
DTC114YKA-T146
REC SW
T301
Q305
2SB798DL
BIAS SW
Q304
2SC3070
BIAS
OSC
Q306
DTC114YKA-T146
BIAS SW
Q302
2SC3360
ISS CONT
Q303
2SC3360
ISS CONT
Q307
FMC3-T148
PB MUTE
AU7V
B+
Q603
DTC143ZKA-T146
PH DETECT
Q601
DTA123JKA-T146
PLUNGER
DRIVE
PS601
Q605
2SB798DL
MOTOR DRIVE
Q602
DTC114YKA-T146
SW
Q604
2SD1664-QR
PLUNGER
DRIVE
Q606
DTC114YKA-T146
MOTOR
DRIVE
D602 1SS355
D603 1SS355
CN601
9P
COM5V
GND
M9V
MOTOR
PL
HALF
CRO2
PHOUT
MODE
REC-RVS
REC-FWD
HALF
CRO2
PH-OUT
PL
MOTOR
MODE
GND
TC-ISS-A
TC-ISS-B
TC-REC
TC-AMS
TC-PB-MUTE
TO
(2/4)
PB-L
PB-R
AU7V
A_GND
REC-L
REC-R
TO
(1/4)
TC-MODE
TC-END
TC-SW
TC-PL
TC-MTR
TO
(2/4)
M9V
M-GND
COM5V
TO
(1/4)

Note on S
• All capac
50 WV o
and tanta
• All resist
specified
• % :

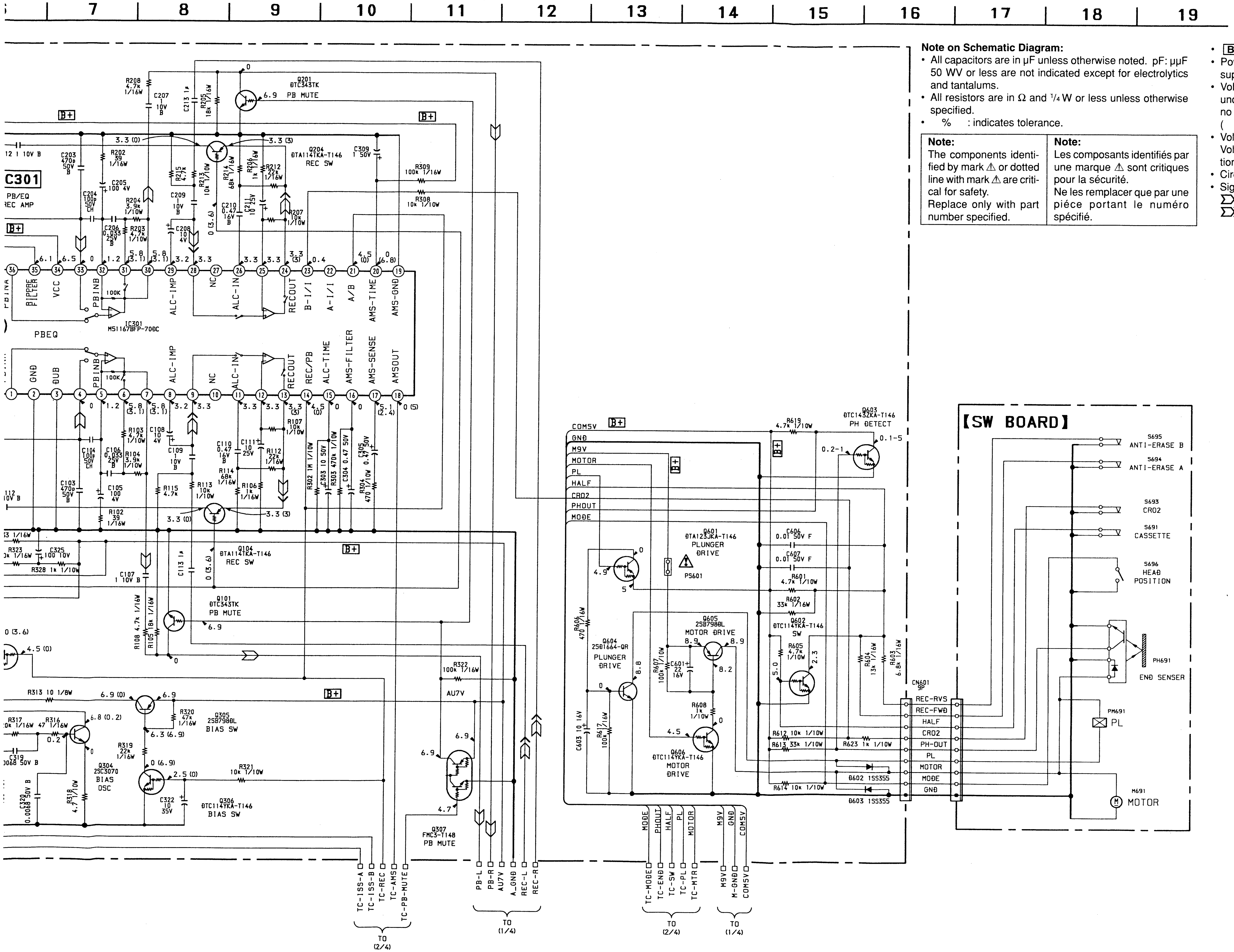
Note:
The comp
fied by ma
line with m
cal for saf
Replace
number s

Note on Schematic Diagram:

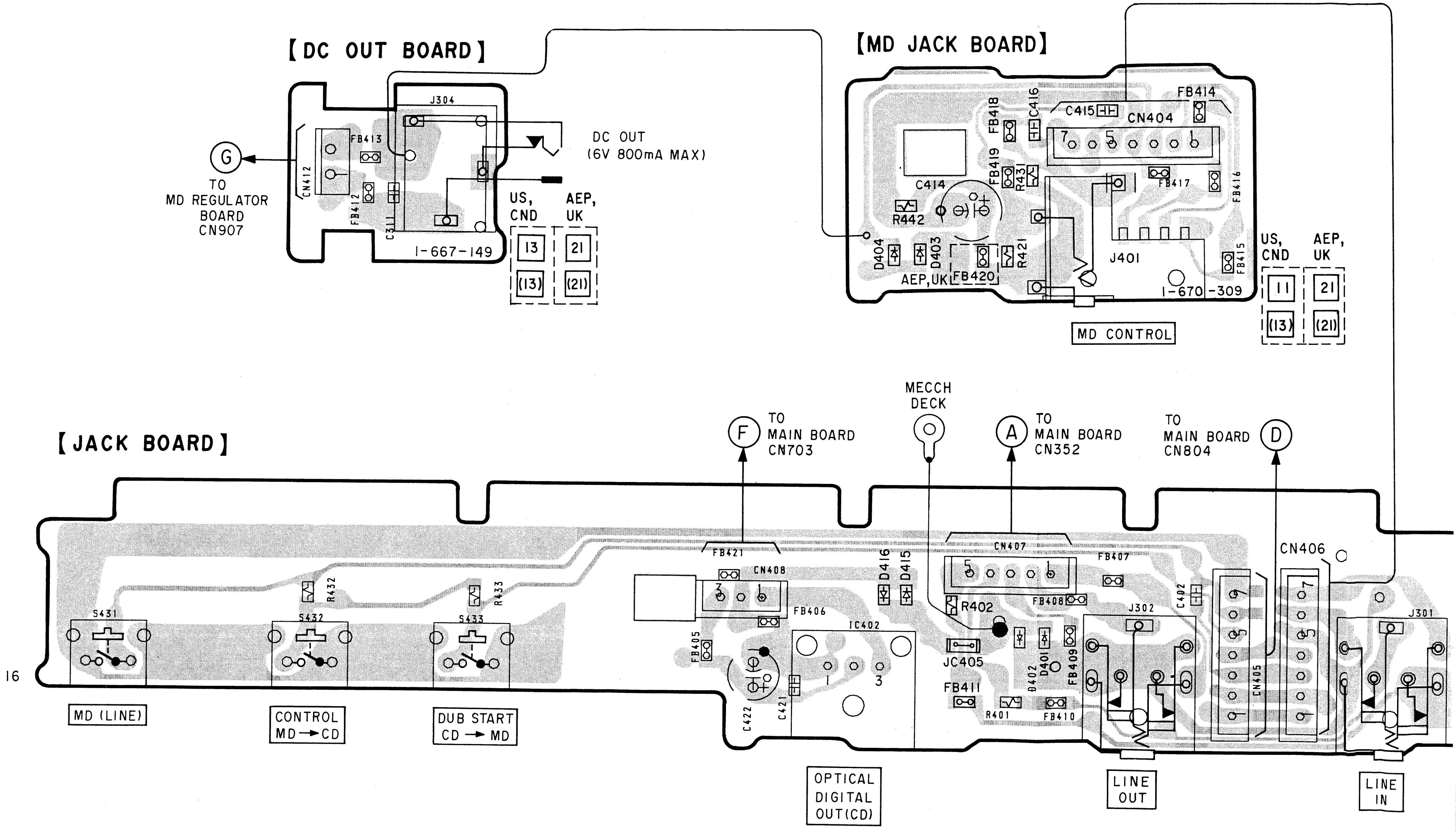
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.

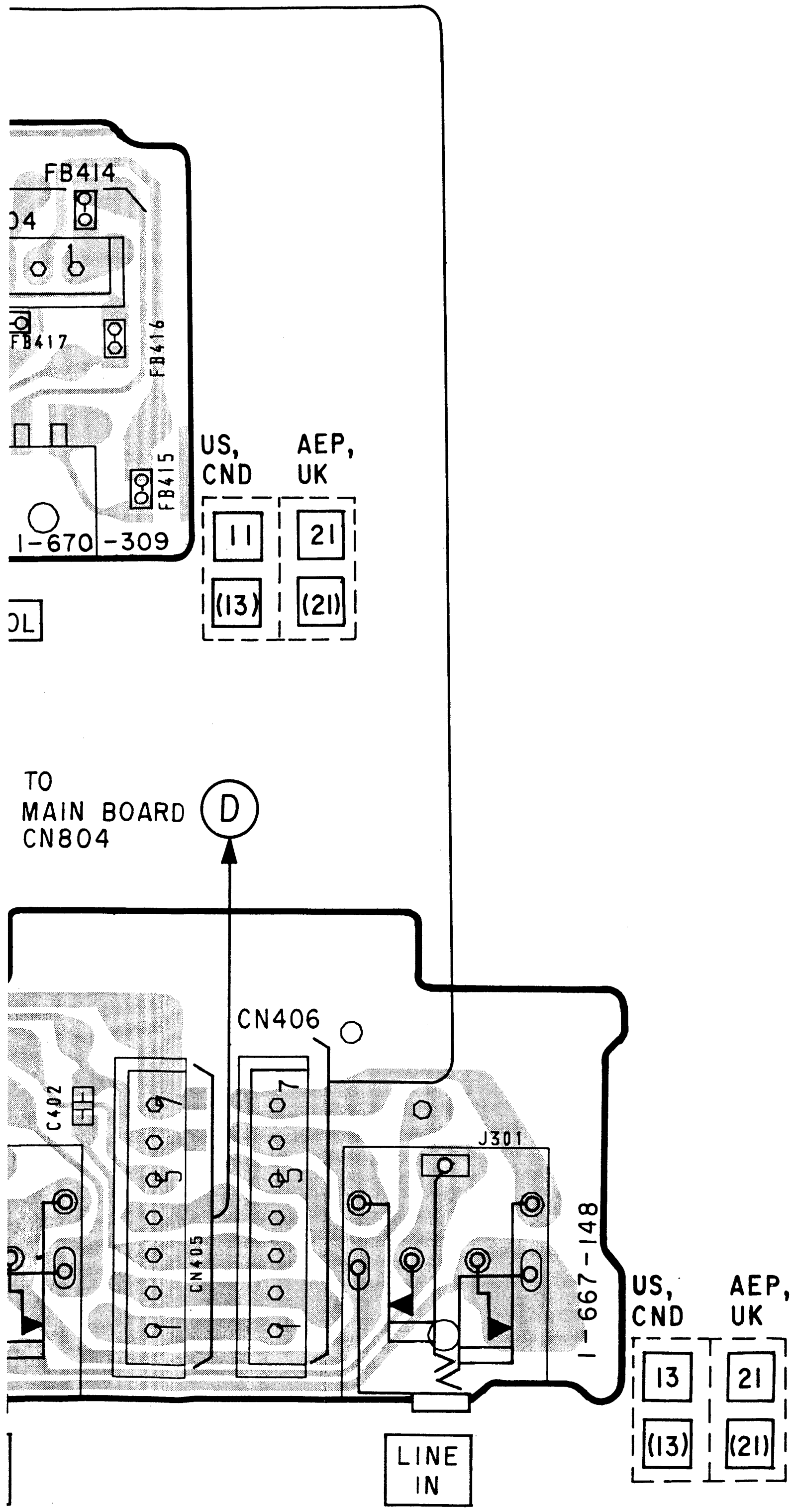
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : REC/PB
  ( ) : PB
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⟩ : PB
  ⟩⟩ : REC



7
8
9
10
11
12
13
14
15
16
17
18
19
IC301
PB/EQ
REC AMP
IC301
M51167BFP-700C
PBEQ
BIPPRE FILTER
VCC
PBINB
ALC-IMP
NC
ALC-IN
RECOUT
B-I/I
A-I/I
A/B
AMS-TIME
AMS-GND
GND
ĐUB
REC/PB
ALC-TIME
AMS-FILTER
AMS-SENSE
AMSOUT
100K
Q201
ĐTC343TK
PB MUTE
Q204
ĐTA114TKA-T146
REC SW
Q104
ĐTA114TKA-T146
REC SW
Q101
ĐTC343TK
PB MUTE
Q305
2SB798ĐL
BIAS SW
Q304
2SC3070
BIAS
OSC
Q306
ĐTC114YKA-T146
BIAS SW
Q307
FMC3-T148
PB MUTE
AU7V
B+
Q603
ĐTC143ZKA-T146
PH ĐETECT
Q601
ĐTA123JKA-T146
PLUNGER
ĐRIVE
PS601
Q604
2SB1664-QR
PLUNGER
ĐRIVE
Q605
2SB798ĐL
MOTOR ĐRIVE
Q602
ĐTC114YKA-T146
SW
Q606
ĐTC114YKA-T146
MOTOR
ĐRIVE
Đ602 1SS355
Đ603 1SS355
CN601
9P
COMSV
GNĐ
M9V
MOTOR
PL
HALF
CRO2
PHOUT
MOĐE
REC-RVS
REC-FWĐ
HALF
CRO2
PH-OUT
PL
MOTOR
MOĐE
GNĐ
【SW BOARD】
S695
ANTI-ERASE B
S694
ANTI-ERASE A
S693
CRO2
S691
CASSETTE
S696
HEAĐ
POSITION
PH691
ENĐ SENSER
PM691
PL
M691
MOTOR
TC-ISS-A
TC-ISS-B
TC-REC
TC-AMS
TC-PB-MUTE
TO
(2/4)
PB-L
PB-R
AU7V
A_GNĐ
REC-L
REC-R
TO
(1/4)
TC-MOĐE
TC-ENĐ
TC-SW
TC-PL
TC-MTR
TO
(2/4)
M9V
M-GNĐ
COMSV
TO
(1/4)

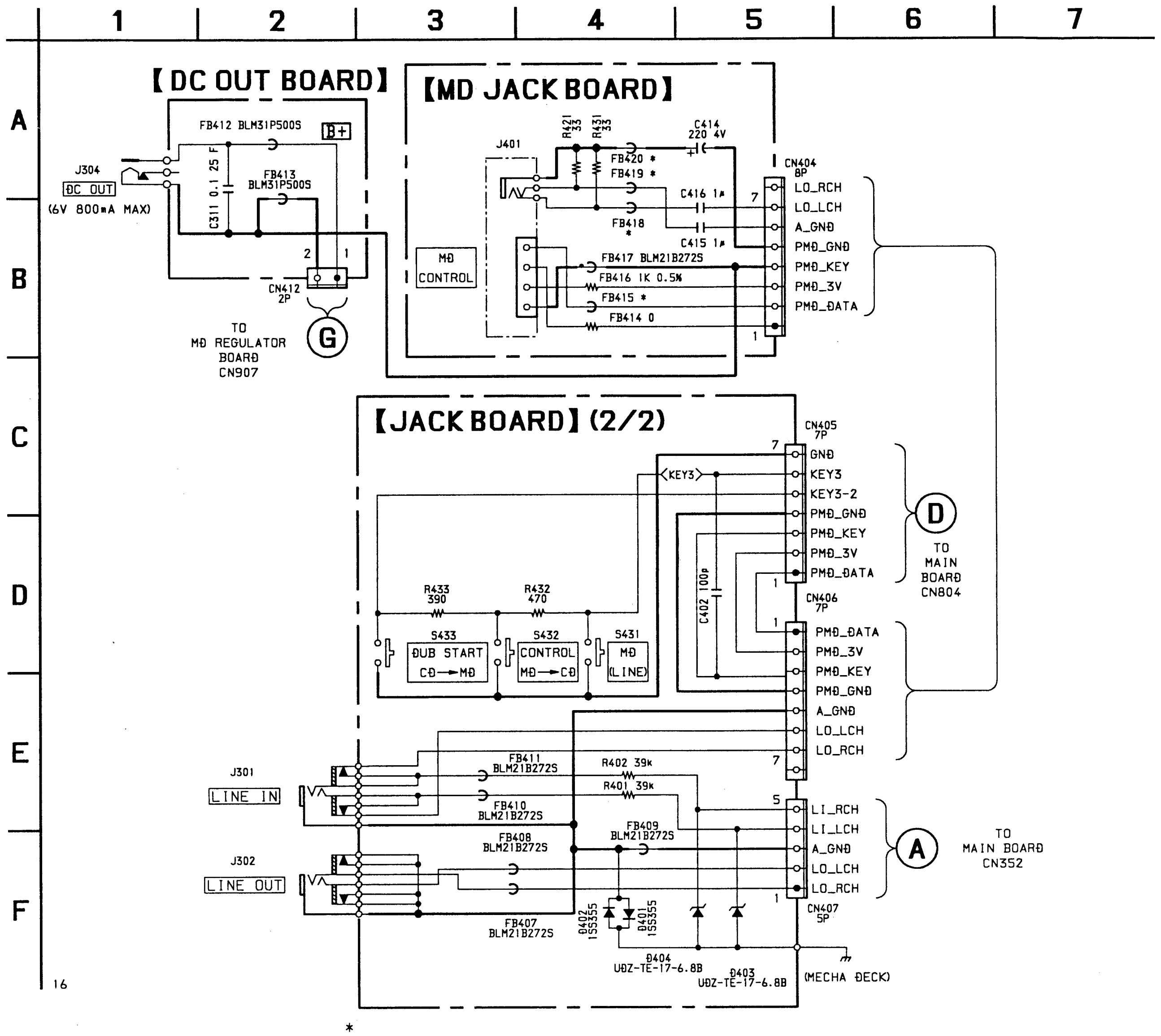

【DC OUT BOARD】
J304
FB413
CN412
FB412
C311
1-667-149
G
TO
MD REGULATOR
BOARD
CN907
DC OUT
(6V 800mA MAX)
US,
CND
AEP,
UK
13
(13)
21
(21)
【MD JACK BOARD】
FB418
C416
C415
CN404
FB414
7
5
1
FB419
R431
FB417
FB416
C414
R442
D404
D403
R421
J401
FB415
AEP,UK
FB420
1-670-309
MD CONTROL
US,
CND
AEP,
UK
11
(13)
21
(21)
【JACK BOARD】
F
TO
MAIN BOARD
CN703
MECCH
DECK
A
TO
MAIN BOARD
CN352
TO
MAIN BOARD
CN804
D
FB421
CN408
3
1
D416
D415
CN407
5
1
FB407
CN406
R432
R433
S431
S432
S433
R402
FB408
J302
C402
J301
FB406
IC402
FB405
1
3
JC405
D402
D401
FB409
CN405
FB411
C422
C421
R401
FB410
16
MD (LINE)
CONTROL
MD → CD
DUB START
CD → MD
OPTICAL
DIGITAL
OUT(CD)
LINE
OUT
LINE
IN


FB414
FB417
FB416
FB415
1-670-309
US, CND
AEP, UK
11
(13)
21
(21)
TO MAIN BOARD CN804
D
CN406
C402
CN405
J301
1-667-148
US, CND
AEP, UK
13
(13)
21
(21)
LINE IN

Note on Printed Wiring Boards:

- ○—— : parts extracted from the component side.
- ░░ : Pattern from the side which enables seeing.

7-12. SCHEMATIC DIAGRAM — JACK/DC SECTION —


DC OUT BOARD
MD JACK BOARD
JACK BOARD (2/2)
J304
DC OUT
(6V 800mA MAX)
FB412 BLM31P500S
FB413 BLM31P500S
C311 0.1 25 F
B+
CN412 2P
TO MD REGULATOR BOARD CN907
G
J401
R421 33
R431 33
C414 220 4V
FB420 *
FB419 *
C416 1μ
FB418 *
C415 1μ
FB417 BLM21B272S
FB416 1K 0.5%
FB415 *
FB414 0
MD CONTROL
CN404 8P
LO_RCH
LO_LCH
A_GND
PMD_GND
PMD_KEY
PMD_3V
PMD_DATA
CN405 7P
GND
KEY3
KEY3-2
PMD_GND
PMD_KEY
PMD_3V
PMD_DATA
D
TO MAIN BOARD CN804
CN406 7P
PMD_DATA
PMD_3V
PMD_KEY
PMD_GND
A_GND
LO_LCH
LO_RCH
C402 100p
R433 390
R432 470
S433 DUB START CD→MD
S432 CONTROL MD→CD
S431 MD (LINE)
J301
LINE IN
J302
LINE OUT
FB411 BLM21B272S
FB410 BLM21B272S
FB408 BLM21B272S
FB407 BLM21B272S
FB409 BLM21B272S
R402 39k
R401 39k
D402 1SS355
D401 1SS355
D404 UDZ-TE-17-6.8B
D403 UDZ-TE-17-6.8B
CN407 5P
LI_RCH
LI_LCH
A_GND
LO_LCH
LO_RCH
A
TO MAIN BOARD CN352
(MECHA DECK)
1
2
3
4
5
6
7
A
B
C
D
E
F
16

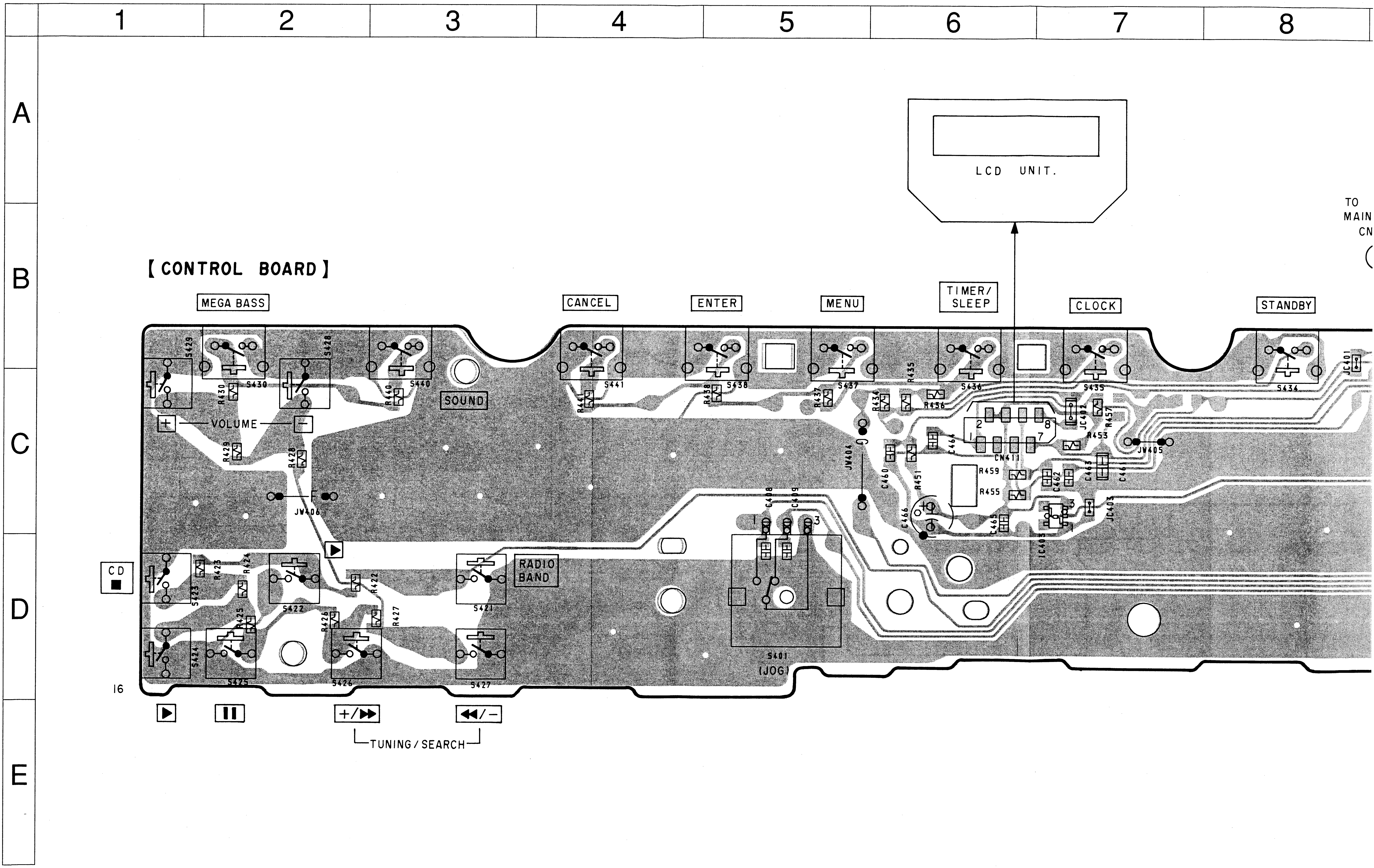
*

Ref No.	US, CND	AEP, UK
FB415	0	0uH
FB418	0	0uH
FB419	0	0uH
FB420	0	0uH

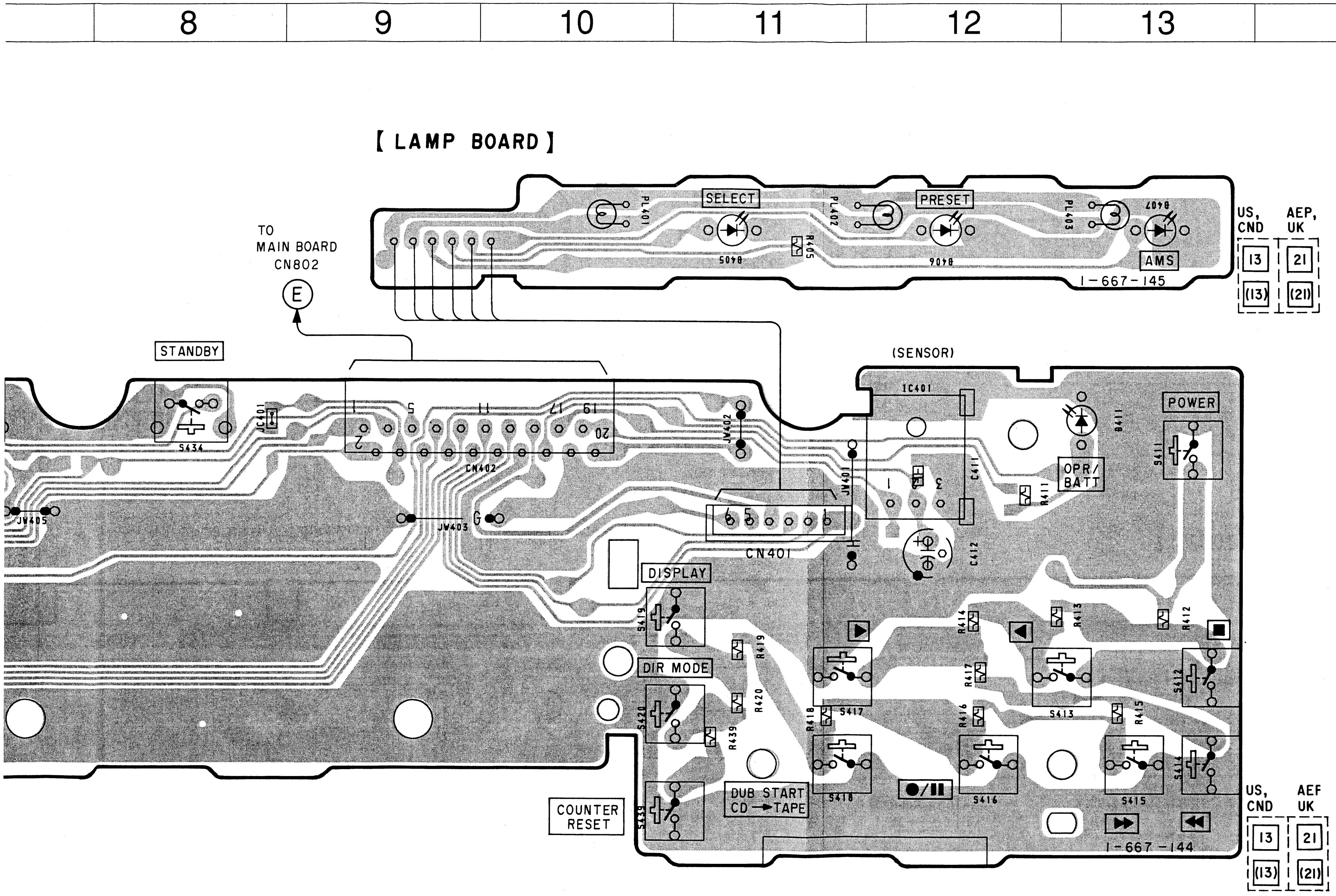
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : panel designation.
- B+ : B+ Line.
- Abbreviation
  CND : Canadian model.

7-13. PRINTED WIRING BOARD — CONTROL SECTION —


1
2
3
4
5
6
7
8
A
B
C
D
E
LCD UNIT.
TO
MAIN
CN
[CONTROL BOARD]
MEGA BASS
CANCEL
ENTER
MENU
TIMER/
SLEEP
CLOCK
STANDBY
SOUND
VOLUME
+
−
CD
■
RADIO
BAND
S429
S430
S428
S440
S441
S438
S437
S436
S435
S434
R430
R440
R441
R438
R437
R434
R435
R436
R429
R428
JW406
JW404
JW405
JC401
JC402
JC403
R457
R453
R459
R455
R451
CN411
C460
C461
C462
C463
C464
C465
C466
C408
C409
IC401
S423
S422
S421
S424
S425
S426
S427
R423
R424
R422
R425
R426
R427
S401
(JOG)
16
▶
❚❚
+/▶▶
◀◀/−
TUNING / SEARCH

[LAMP BOARD]

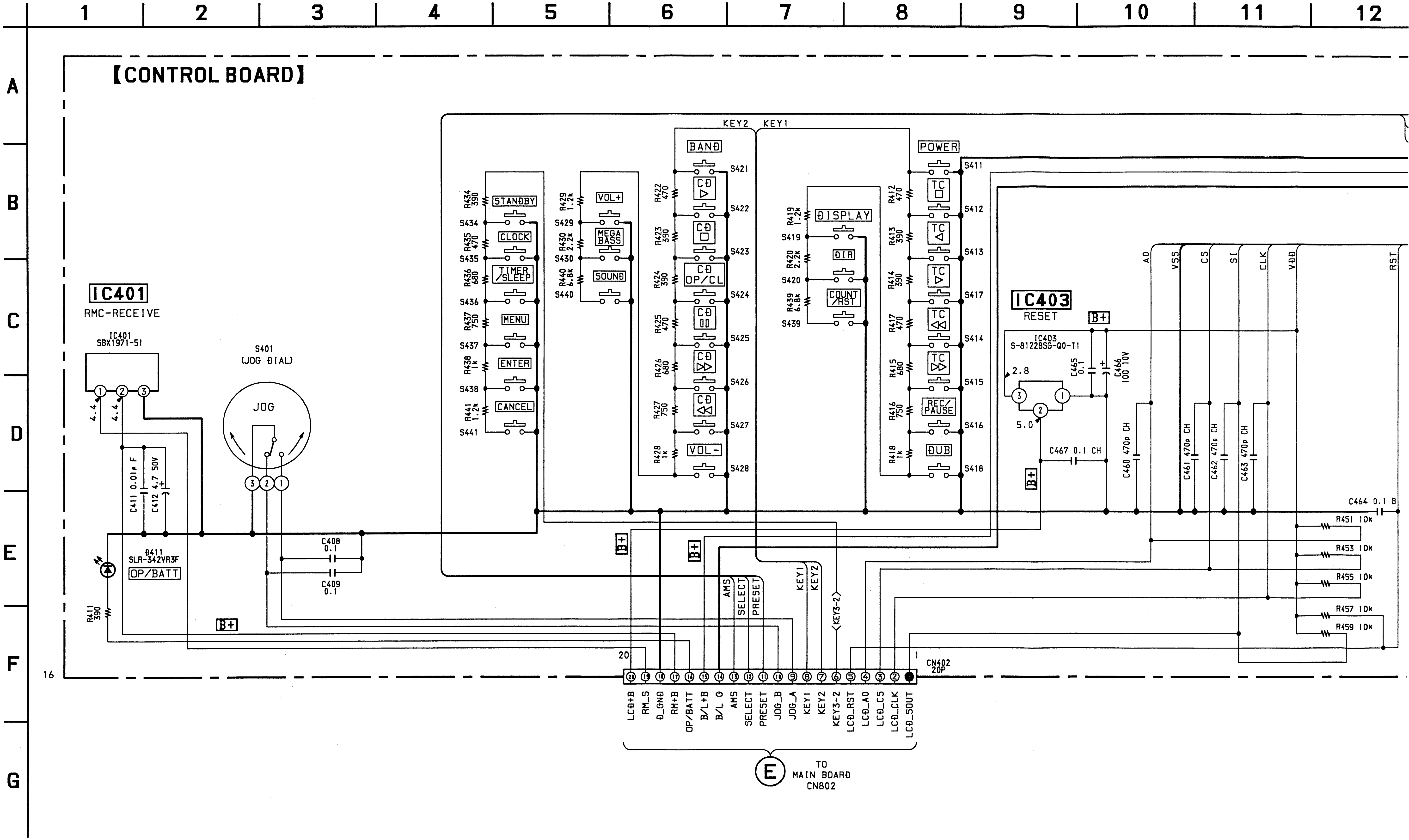

8
9
10
11
12
13
14
SELECT
PRESET
AMS
PL401
PL402
PL403
D405
D406
D407
R405
1-667-145
US, CND
AEP, UK
13
(13)
21
(21)
TO MAIN BOARD CN802
E
STANDBY
S434
IC401
CN402
1
5
11
17
19
2
20
JW402
JW401
JW403
JW405
G
CN401
6 5
1
(SENSOR)
IC401
C411
C412
D411
R411
OPR/ BATT
POWER
S411
DISPLAY
S419
DIR MODE
S420
R419
R420
R439
S439
COUNTER RESET
DUB START CD → TAPE
R414
R413
R412
R417
R418
R416
R415
S417
S413
S412
S418
S416
S415
S414
●/II
1-667-144
US, CND
AEF UK
13
(13)
21
(21)

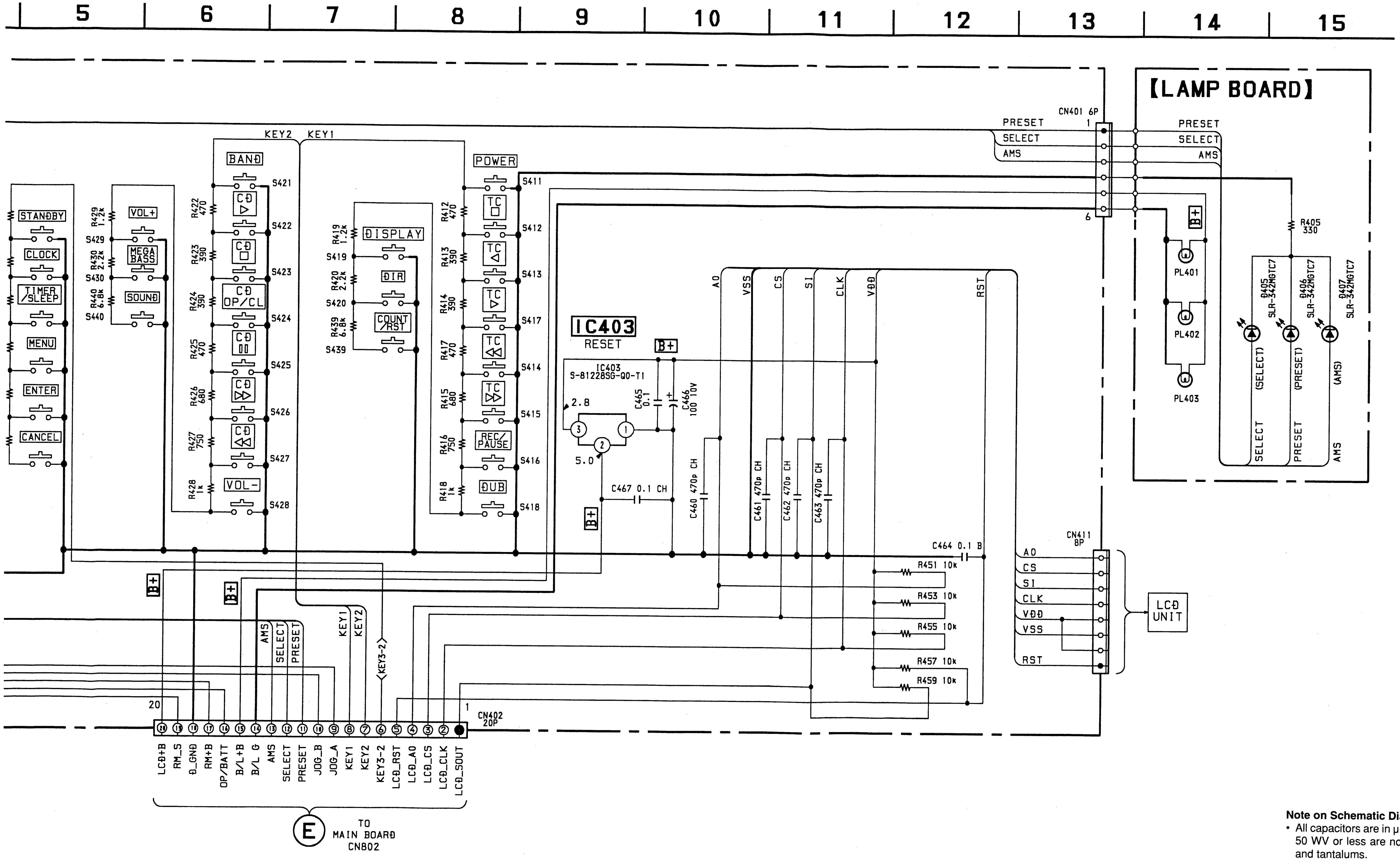
• Semiconductor Location

Ref. No.	Location
D405	A-11
D406	A-12
D407	A-13
D411	B-13
IC401	C-12
IC403	C-7

Note on Printed Wiring Boards:

- ○—— : parts extracted from the component side.
- ▨ : Pattern from the side which enables seeing.

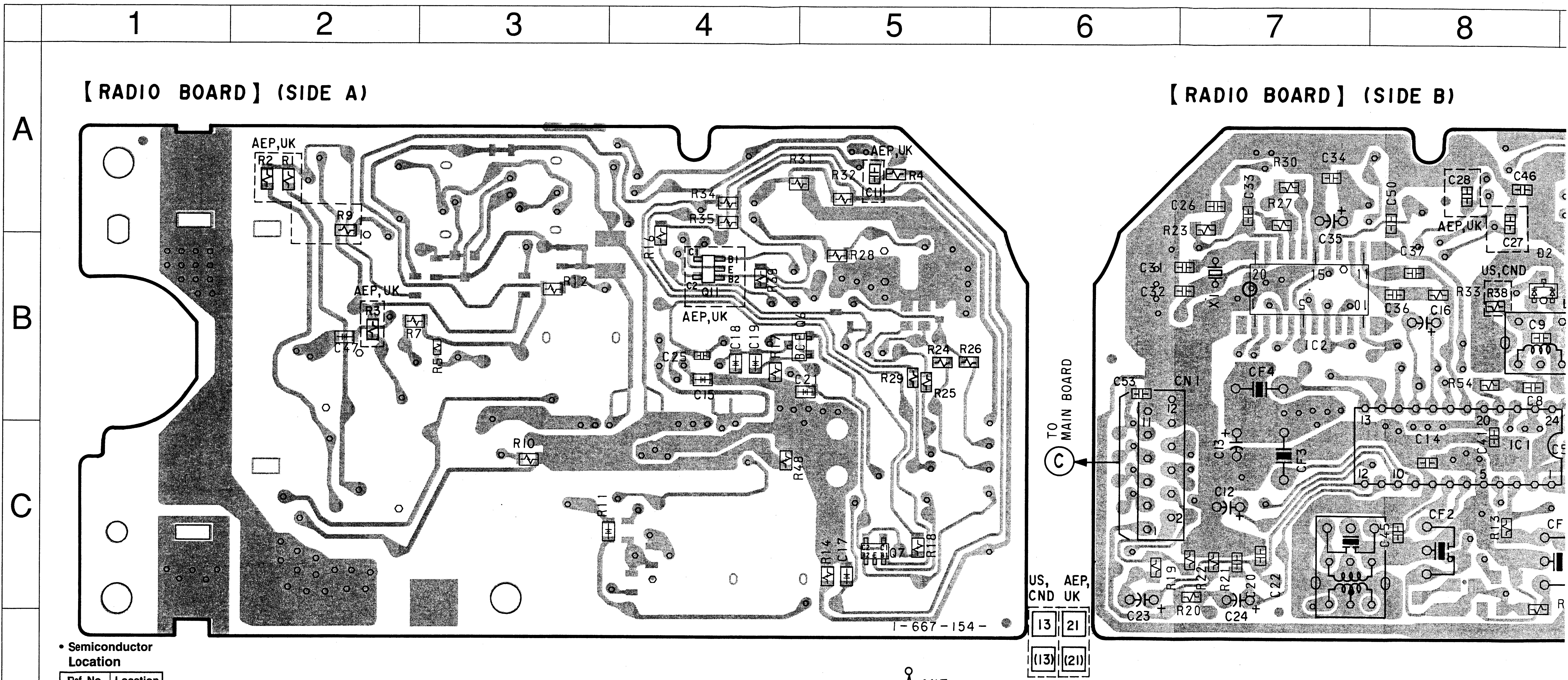

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
【CONTROL BOARD】
IC401
RMC-RECEIVE
IC401
SBX1971-51
4.4
4.4
C411 0.01μ F
C412 4.7 50V
S401
(JOG DIAL)
JOG
D411
SLR-342VR3F
OP/BATT
R411
390
B+
C408
0.1
C409
0.1
R434 390
STANDBY
S434
R435 470
CLOCK
S435
R436 680
TIMER /SLEEP
S436
R437 750
MENU
S437
R438 1k
ENTER
S438
R441 1.2k
CANCEL
S441
R429 1.2k
VOL+
S429
R430 2.2k
MEGA BASS
S430
R440 6.8k
SOUND
S440
KEY2
KEY1
BAND
S421
R422 470
CD ▷
S422
R423 390
CD □
S423
R424 330
CD OP/CL
S424
R425 470
CD ||
S425
R426 680
CD ▷▷
S426
R427 750
CD ◁◁
S427
R428 1k
VOL-
S428
R419 1.2k
DISPLAY
S419
R420 2.2k
DIR
S420
R439 6.8k
COUNT /RST
S439
POWER
S411
R412 470
TC □
S412
R413 390
TC ◁
S413
R414 330
TC ▷
S417
R417 470
TC ◁◁
S414
R415 680
TC ▷▷
S415
R416 750
REC/ PAUSE
S416
R418 1k
DUB
S418
IC403
RESET
B+
IC403
S-81228SG-QO-T1
2.8
5.0
C465 0.1
C466 100 10V
C467 0.1 CH
C460 470p CH
C461 470p CH
C462 470p CH
C463 470p CH
A0
VSS
CS
SI
CLK
VDD
RST
C464 0.1 B
R451 10k
R453 10k
R455 10k
R457 10k
R459 10k
AMS
SELECT
PRESET
KEY1
KEY2
KEY3-2
20
1
16
CN402
20P
⑳ ⑲ ⑱ ⑰ ⑯ ⑮ ⑭ ⑬ ⑫ ⑪ ⑩ ⑨ ⑧ ⑦ ⑥ ⑤ ④ ③ ② ●
LCD+B
RM_S
D_GND
RM+B
OP/BATT
B/L+B
B/L G
AMS
SELECT
PRESET
JOG_B
JOG_A
KEY1
KEY2
KEY3-2
LCD_RST
LCD_A0
LCD_CS
LCD_CLK
LCD_SOUT
E
TO
MAIN BOARD
CN802


5
6
7
8
9
10
11
12
13
14
15
【LAMP BOARD】
CN401 6P
PRESET
SELECT
AMS
1
6
PRESET
SELECT
AMS
R405 330
PL401
PL402
PL403
D405 SLR-342MGTC7
D406 SLR-342MGTC7
D407 SLR-342MGTC7
(SELECT)
(PRESET)
(AMS)
SELECT
PRESET
AMS
B+
KEY2
KEY1
BAND
POWER
STANDBY
CLOCK
TIMER /SLEEP
MENU
ENTER
CANCEL
VOL+
MEGA BASS
SOUND
R429 1.2k
R430 2.2k
R440 6.8k
S429
S430
S440
CD ▷
CD □
CD OP/CL
CD ▯▯
CD ▷▷
CD ◁◁
VOL–
R422 470
R423 390
R424 390
R425 470
R426 680
R427 750
R428 1k
S421
S422
S423
S424
S425
S426
S427
S428
DISPLAY
DIR
COUNT /RST
R419 1.2k
R420 2.2k
R439 6.8k
S419
S420
S439
TC □
TC ▷
TC ◁
TC ◁◁
TC ▷▷
REC/ PAUSE
DUB
R412 470
R413 390
R414 390
R417 470
R415 680
R416 750
R418 1k
S411
S412
S413
S417
S414
S415
S416
S418
IC403
RESET
IC403 S-81228SG-QO-T1
2.8
5.0
C465 0.1
C466 100 10V
C467 0.1 CH
A0
VSS
CS
SI
CLK
VDD
RST
C460 470p CH
C461 470p CH
C462 470p CH
C463 470p CH
C464 0.1 B
R451 10k
R453 10k
R455 10k
R457 10k
R459 10k
CN411 8P
A0
CS
SI
CLK
VDD
VSS
RST
LCD UNIT
AMS
SELECT
PRESET
KEY1
KEY2
(KEY3-2)
20
1
CN402 20P
LCD+B
RM_S
D_GND
RM+B
OP/BATT
B/L+B
B/L G
AMS
SELECT
PRESET
JOG_B
JOG_A
KEY1
KEY2
KEY3-2
LCD_RST
LCD_A0
LCD_CS
LCD_CLK
LCD_SOUT
E
TO MAIN BOARD CN802

Note on Schematic Diagram:

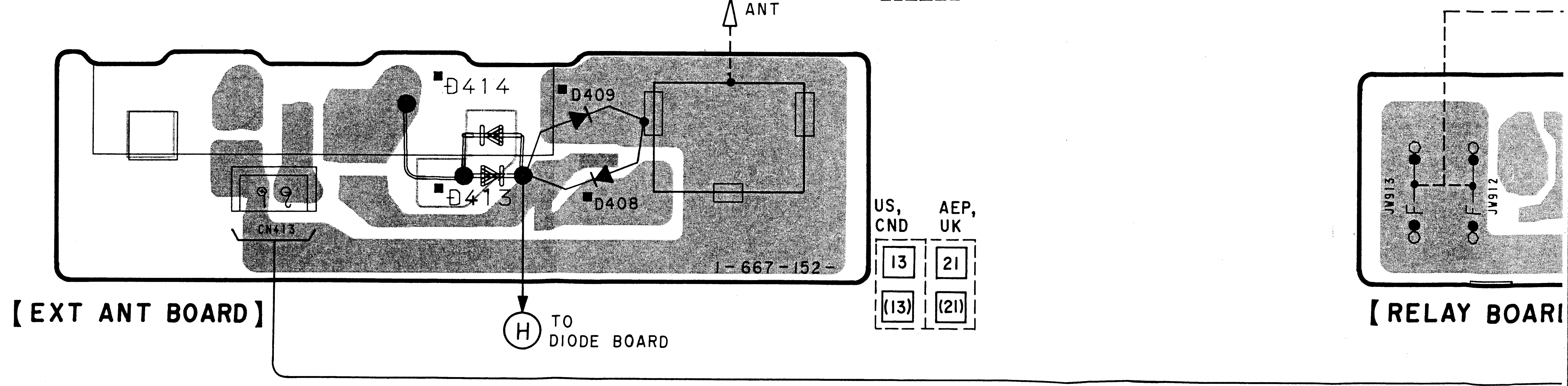
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ☐ : panel designation.
- B+ : B+ Line.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

7-15. PRINTED WIRING BOARD — TUNER SECTION —


1
2
3
4
5
6
7
8
A
B
C
【RADIO BOARD】 (SIDE A)
【RADIO BOARD】 (SIDE B)
AEP,UK
R2 R1
R9
AEP,UK
R3
R7
C47
R5
R12
R10
R11
R31
R32
AEP,UK
R4
C11
R34
R35
R16
C1
Q11
C2
AEP,UK
R38
R28
C18
C19
Q6
C25
C15
C21
R24
R26
R29
R25
R48
R14
C17
Q7
R18
1-667-154-
TO MAIN BOARD
C
R30
C34
C33
R27
C26
R23
C35
C50
C28
C46
AEP,UK
C27
C37
C31
C32
X1
IC2
US,CND
R33
R38
C36
C16
C9
CN1
C53
CF4
R54
C8
C13
CF3
C14
IC1
C12
CF2
R13
C45
R19
R22
R21
C20
C22
C23
R20
C24
US, CND
AEP, UK
13
21
(13)
(21)

- **Semiconductor Location**

Ref. No.	Location
D1	B-9
D2	B-8
D3	B-10
D408	E-5
D409	D-4
D413	E-4
D414	D-4
IC1	C-8
IC2	B-7
Q1	C-9
Q2	B10
Q3	B-9
Q4	B-10
Q6	B-5
Q7	C-5
Q11	B-4


D
E
ANT
D414
D409
D413
D408
CN413
1-667-152-
US, CND
AEP, UK
13
21
(13)
(21)
JW913
JW912
【EXT ANT BOARD】
H
TO DIODE BOARD
【RELAY BOARD

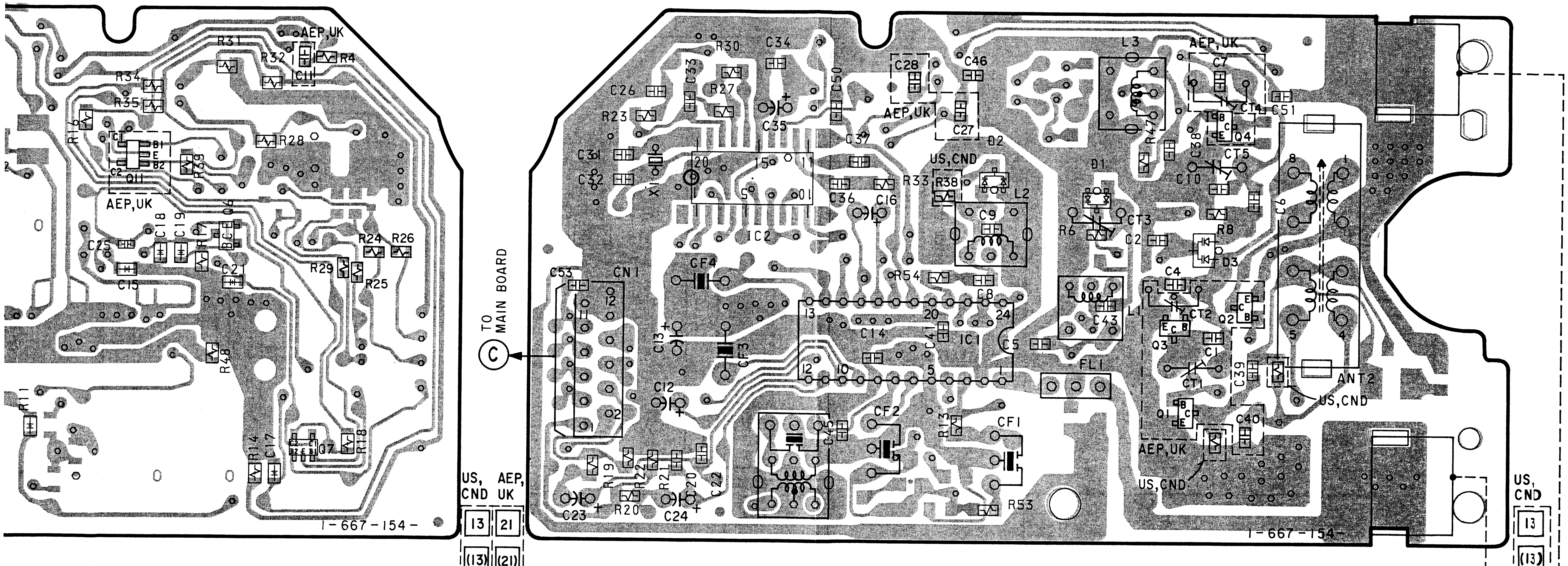
16

Note on Printed Wiring Boards:
- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ▨ : Pattern from the side which enables seeing.

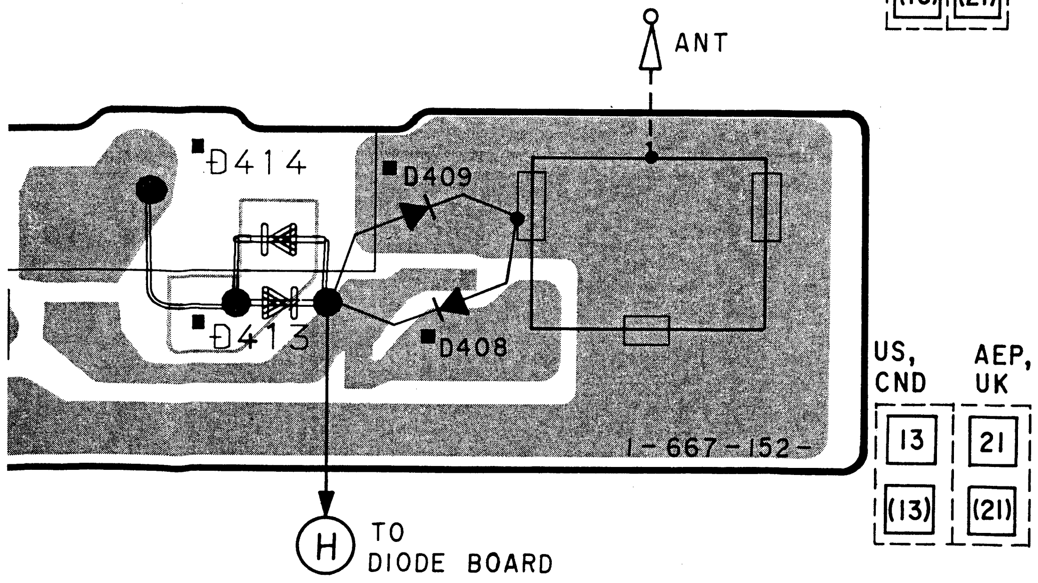
(The other layers' patterns are not indicated.)

4 5 6 7 8 9 10 11

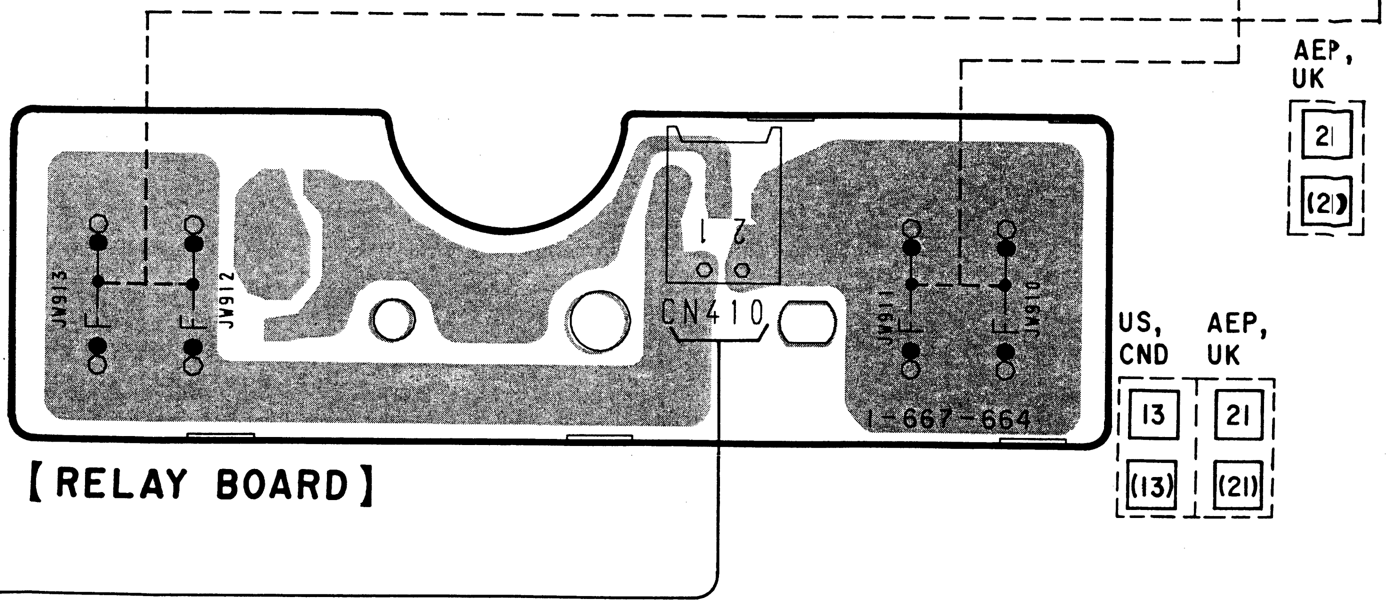
【RADIO BOARD】 (SIDE B)



AEP,UK
R31
R32
C11
R4
R34
R35
R16
C1
B1
E
B2
C2
Q11
R39
R28
AEP,UK
C18
C19
R7
Q6
C25
C15
C21
R24
R26
R29
R25
R48
R11
R14
C17
Q7
R18
1-667-154
TO MAIN BOARD
C
R30
C34
C33
R27
C26
R23
C35
C50
C28
C46
AEP,UK
C27
C37
D2
C31
C32
X1
20
15
11
5
01
IC2
C36
C16
R33
US,CND
R38
L2
C9
CF4
R54
C8
C53
CN1
12
11
2
1
C13
CF3
13
20
24
C14
C41
IC1
C5
12
10
5
1
C12
CF2
C45
R13
CF1
C23
R19
R22
R20
R21
C20
C24
C22
R53
L3
AEP,UK
C7
CT4
C51
R47
C38
Q4
CT5
C10
D1
CT3
R6
R17
C2
R8
D3
C6
8
1
C4
CT2
Q2
Q3
C43
L1
C1
CT1
C39
ANT2
US,CND
FL1
Q1
C40
AEP,UK
US,CND
5
4
1-667-154
US, CND
13
(13)
AEP, UK
21
(21)
US, CND
13
(13)
AEP, UK
21
(21)



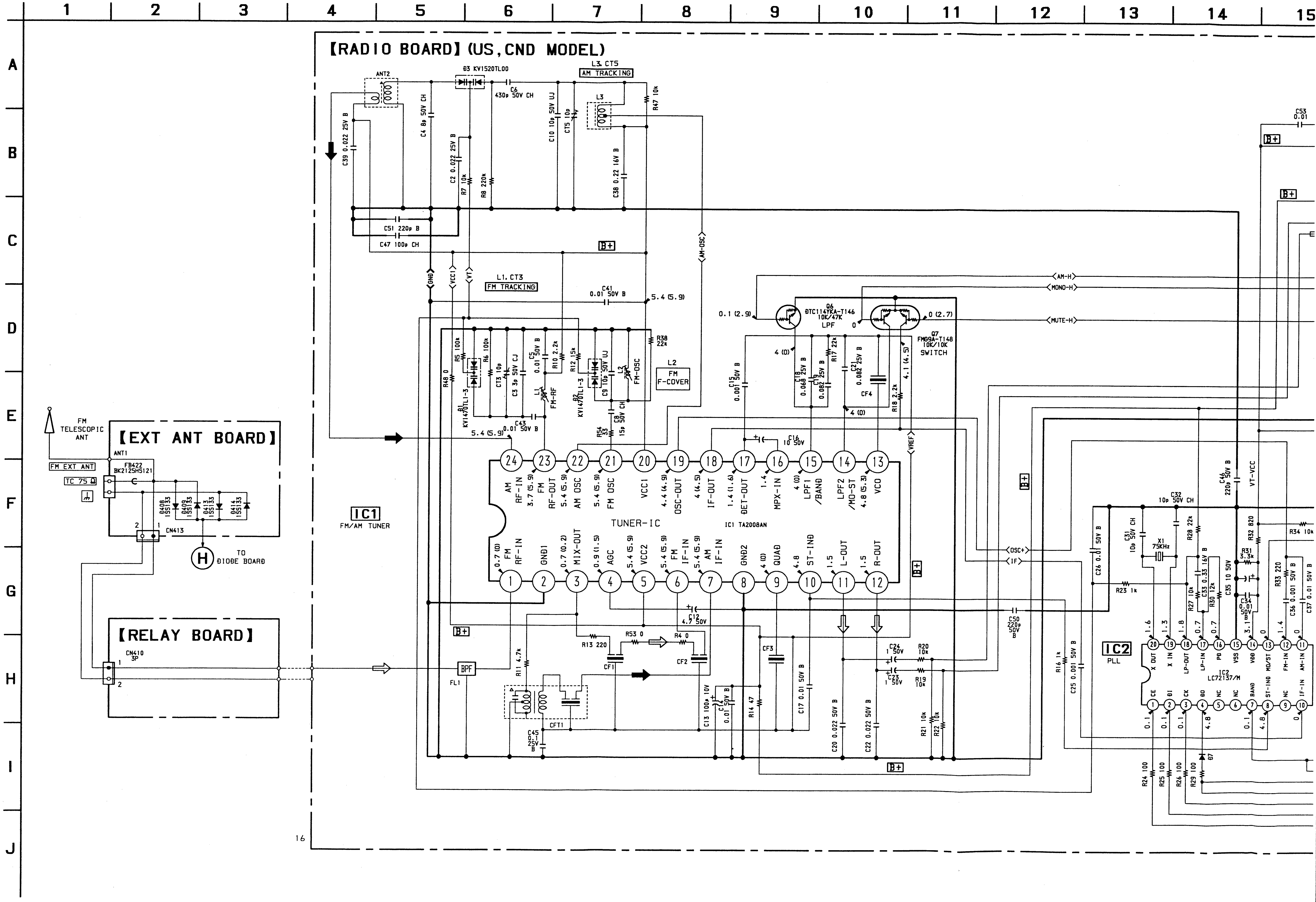
ANT
D414
D409
D413
D408
1-667-152
TO DIODE BOARD
H
US, CND
13
(13)
AEP, UK
21
(21)



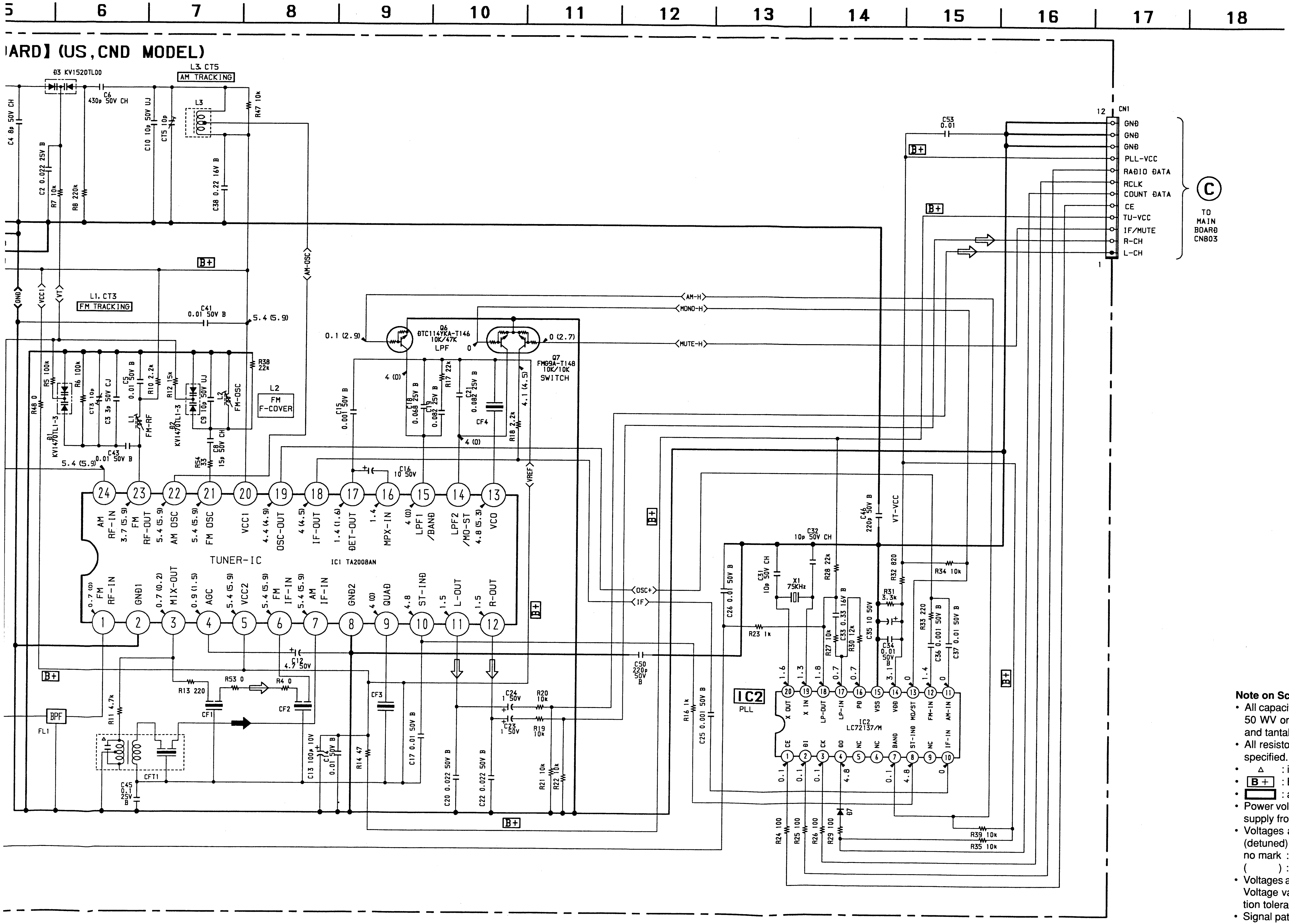
JW913
JW912
CN410
JW911
JW910
1-667-664
US, CND
13
(13)
AEP, UK
21
(21)

【RELAY BOARD】

7-16. SCHEMATIC DIAGRAM — TUNER SECTION (US/CND MODEL) —



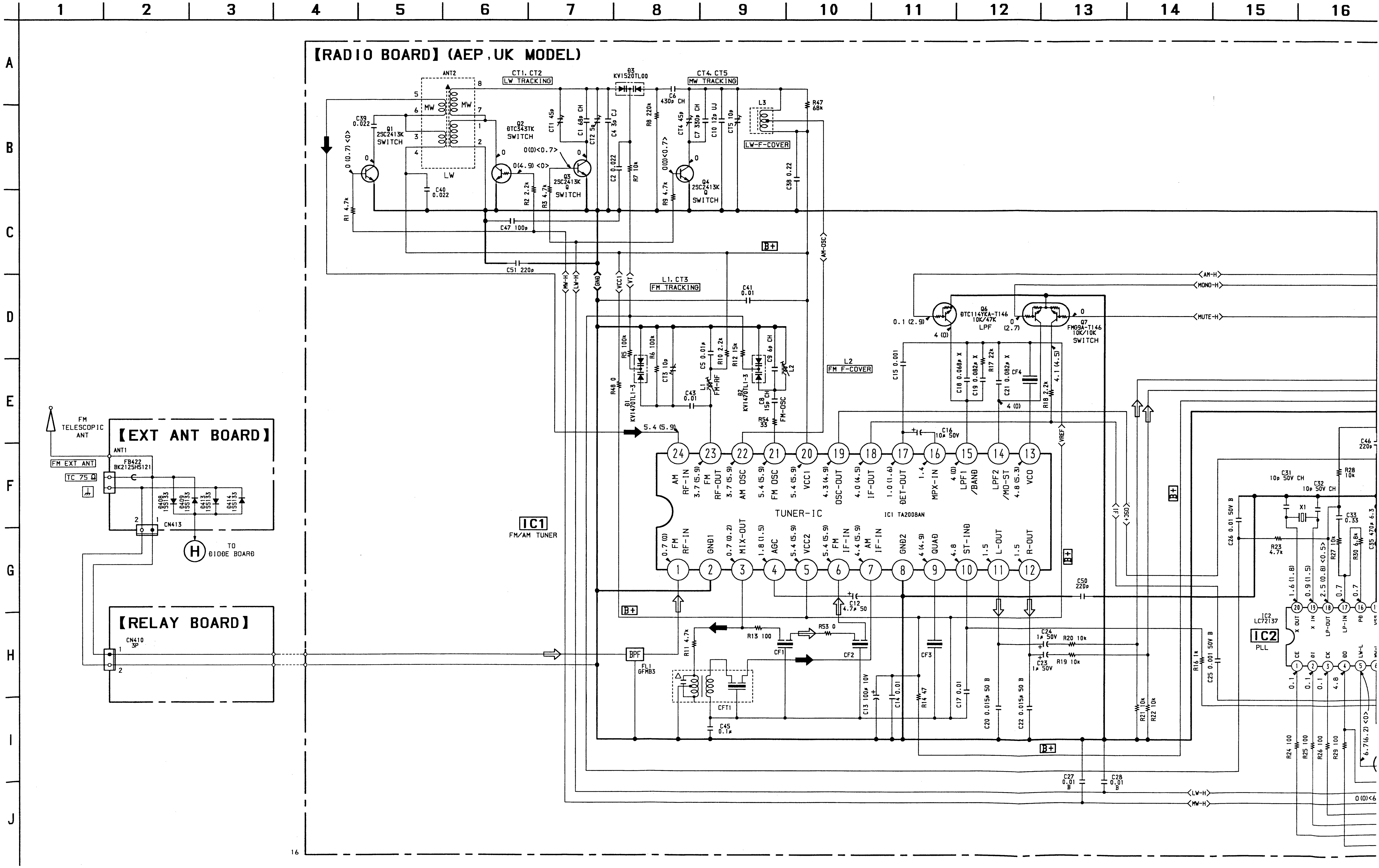
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
【RADIO BOARD】(US, CND MODEL)
ANT2
B3 KV1520TL00
C6 430p 50V CH
L3, CT5
AM TRACKING
L3
R47 10k
C39 0.022 25V B
C4 8p 50V CH
C2 0.022 25V B
R7 10k
R8 220k
C10 10p 50V UJ
CT5 10p
C38 0.22 16V B
C51 220p B
C47 100p CH
B+
GND
VCC1
VT
L1, CT3
FM TRACKING
C41 0.01 50V B
5.4 (5.9)
AM-OSC
R48 0
R5 100k
R6 100k
CT3 10p
C3 3p 50V CJ
C5 0.01 50V B
R10 2.2k
R12 15k
C9 10p 50V UJ
L2 FM-OSC
R38 22k
L2
FM
F-COVER
L1 FM-RF
B1 KV1470TL1-3
B2 KV1470TL1-3
C43 0.01 50V B
R54 33
C8 15p 50V CH
FM TELESCOPIC ANT
【EXT ANT BOARD】
ANT1
FB422 BK2125HS121
FM EXT ANT
TC 75 Ω
D408 1SS133
D409 1SS133
D413 1SS133
D414 1SS133
CN413
H
TO DIODE BOARD
IC1
FM/AM TUNER
TUNER-IC
IC1 TA2008AN
24 AM RF-IN
23 FM RF-OUT 3.7 (5.9)
22 AM OSC 5.4 (5.9)
21 FM OSC 5.4 (5.9)
20 VCC1
19 OSC-OUT 4.4 (4.9)
18 IF-OUT 4 (4.5)
17 DET-OUT 1.4 (1.6)
16 MPX-IN 1.4
15 LPF1 /BAND 4 (0)
14 LPF2 /MO-ST
13 VCO 4.8 (5.3)
1 FM RF-IN 0.7 (0)
2 GND1
3 MIX-OUT 0.7 (0.2)
4 AGC 0.9 (1.5)
5 VCC2 5.4 (5.9)
6 FM IF-IN 5.4 (5.9)
7 AM IF-IN
8 GND2
9 QUAD 4 (0)
10 ST-IND 4.8
11 L-OUT 1.5
12 R-OUT 1.5
0.1 (2.9)
Q6 DTC114YKA-T146 10K/47K LPF
0
0 (2.7)
Q7 FMG9A-T148 10K/10K SWITCH
4 (0)
C15 0.001 50V B
C18 0.068 25V B
C19 0.082 25V B
R17 22k
C21 0.082 25V B
CF4
R18 2.2k
4.1 (4.5)
4 (0)
C16 10 50V
VREF
AM-H
MONO-H
MUTE-H
【RELAY BOARD】
CN410 3P
BPF
FL1
R11 4.7k
CFT1
C45 0.1 25V B
R13 220
R53 0
R4 0
C12 4.7 50V
CF1
CF2
CF3
C13 100μ 10V
C14 0.01 50V B
R14 47
C17 0.01 50V B
C20 0.022 50V B
C22 0.022 50V B
C24 1 50V
C23 1 50V
R20 10k
R19 10k
R21 10k
R22 10k
C50 220p 50V B
OSC+
IF
C26 0.01 50V B
R23 1k
R16 1k
C25 0.001 50V B
C31 10p 50V CH
X1 75KHz
C32 10p 50V CH
R28 22k
C33 0.33 16V B
R27 10k
R30 12k
C35 10 50V
C34 0.01 50V
R31 3.3k
R32 820
C46 220μ 50V B
VT-VCC
R33 220
C36 0.001 50V B
C37 0.01 50V B
R34 10k
C53 0.01
IC2
PLL
IC2 LC72137/M
20 X OUT
19 X IN
18 LP-OUT
17 LP-IN
16 PD
15 VSS
14 VDD
13 MO/ST
12 FM-IN
11 AM-IN
1 CE
2 DI
3 CK
4 DO
5 NC
6 NC
7 BAND
8 ST-IND
9 NC
10 IF-IN
R24 100
R25 100
R26 100
R29 100
D7
16


5
6
7
8
9
10
11
12
13
14
15
16
17
18
ARD] (US,CND MODEL)
D3 KV1520TL00
C6 430p 50V CH
L3, CT5
AM TRACKING
L3
R47 10k
C4 8p 50V CH
C2 0.022 25V B
R7 10k
R8 220k
C10 10p 50V UJ
CT5 10p
C38 0.22 16V B
B+
AM-OSC
GND
VCC1
VT
L1, CT3
FM TRACKING
C41 0.01 50V B
5.4 (5.9)
R38 22k
L2 FM F-COVER
R48 0
R5 100k
R6 100k
CT3 10p
C3 3p 50V CJ
C5 0.01 50V B
R10 2.2k
R12 15k
C9 10p 50V UJ
L2 FM-OSC
L1 FM-RF
D1 KV1470TL1-3
D2 KV1470TL1-3
C8 15p 50V CH
R54 33
C43 0.01 50V B
Q6 DTC114YKA-T146 10K/47K LPF
Q7 FMG9A-T148 10K/10K SWITCH
0.1 (2.9)
0 (2.7)
4 (0)
C15 0.001 50V B
C18 0.068 25V B
C19 0.082 25V B
R17 22k
C21 0.082 25V B
CF4
R18 2.2k
4.1 (4.5)
C16 10 50V
VREF
AM-H
MONO-H
MUTE-H
TUNER-IC
IC1 TA2008AN
AM RF-IN
FM RF-OUT
AM OSC
FM OSC
VCC1
OSC-OUT
IF-OUT
DET-OUT
MPX-IN
LPF1 /BAND
LPF2 /MO-ST
VCO
FM RF-IN
GND1
MIX-OUT
AGC
VCC2
FM IF-IN
AM IF-IN
GND2
QUAD
ST-IND
L-OUT
R-OUT
OSC+
IF
C12 4.7 50V
R13 220
R53 0
R4 0
CF1
CF2
CF3
R11 4.7k
BPF
FL1
CFT1
C45 0.1 25V B
C13 100μ 10V
C1 0.01 50V B
R14 47
C17 0.01 50V B
C24 1 50V
C23 1 50V
R20 10k
R19 10k
C20 0.022 50V B
C22 0.022 50V B
R21 10k
R22 10k
C50 220p 50V B
R16 1k
C25 0.001 50V B
C26 0.01 50V B
R23 1k
C31 10p 50V CH
X1 75KHz
C32 10p 50V CH
R28 22k
C46 220p 50V B
VT-VCC
R27 10k
C33 0.33 16V B
R30 12k
C35 10 50V
R31 3.3k
C34 0.01 50V
R32 820
R34 10k
R33 220
C36 0.001 50V B
C37 0.01 50V B
IC2 PLL
IC2 LC72137/M
X OUT
X IN
LP-OUT
LP-IN
PD
VSS
VDD
MO/ST
FM-IN
AM-IN
CE
DI
CK
DO
NC
BAND
ST-IND
IF-IN
D7
R24 100
R25 100
R26 100
R29 100
R39 10k
R35 10k
C53 0.01
CN1
GND
GND
GND
PLL-VCC
RADIO DATA
RCLK
COUNT DATA
CE
TU-VCC
IF/MUTE
R-CH
L-CH
C
TO MAIN BOARD CN803

Note on Schematic Diagram:

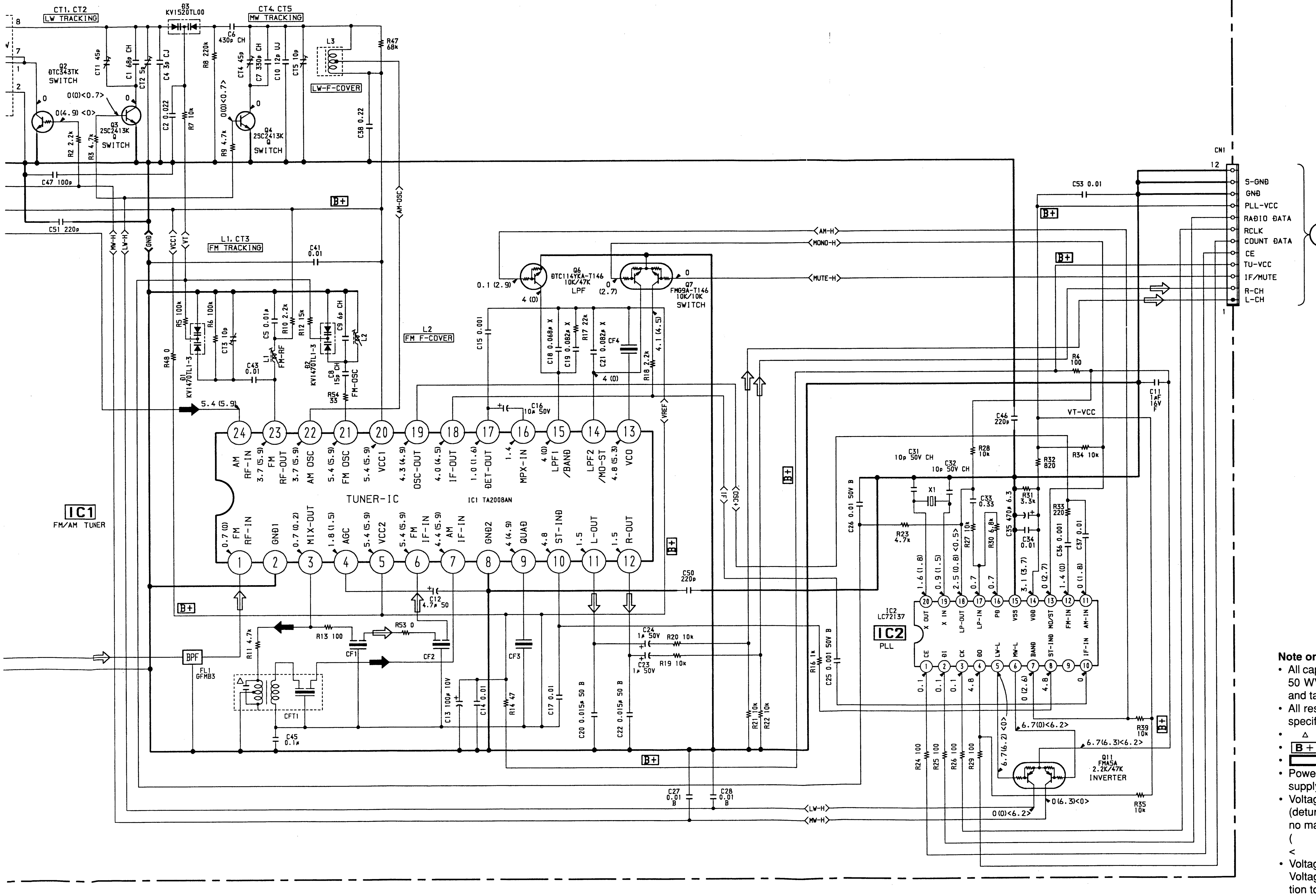
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM
- Abbreviation
  CND : Canadian model.

7-17. SCHEMATIC DIAGRAM —TUNER SECTION (AEP/UK MODEL)—


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
【RADIO BOARD】(AEP, UK MODEL)
ANT2
CT1, CT2
LW TRACKING
Q3
KV1520TL00
CT4, CT5
MW TRACKING
L3
LW-F-COVER
R47 68k
MW
LW
C39 0.022
Q1 2SC2413K SWITCH
Q2 DTC343TK SWITCH
Q3 2SC2413K SWITCH
Q4 2SC2413K SWITCH
C40 0.022
C47 100p
C51 220p
C6 430p CH
R1 4.7k
R2 2.2k
R3 4.7k
R7 10k
R8 220k
R9 4.7k
C38 0.22
B+
AM-OSC
MW-H
LW-H
GND
VCC1
VT
L1, CT3
FM TRACKING
C41 0.01
L2
FM F-COVER
C15 0.001
R5 100k
R6 100k
CT3 10p
C5 0.01μ
R10 2.2k
R12 15k
C9 6p CH
D1 KV1470TL1-3
D2 KV1470TL1-3
C43 0.01
L1 FM-RF
C8 15p CH
L2 FM-OSC
R54 33
R48 0
5.4 (5.9)
Q6 DTC114YKA-T146 10K/47K LPF
Q7 FMG9A-T146 10K/10K SWITCH
C18 0.068μ X
C19 0.082μ X
R17 22k
C21 0.082μ X
CF4
R18 2.2k
C16 10μ 50V
VREF
AM-H
MONO-H
MUTE-H
【EXT ANT BOARD】
FM TELESCOPIC ANT
FM EXT ANT
TC 75 Ω
ANT1
FB422 BK2125HS121
D408 1SS133
D409 1SS133
D413 1SS133
D414 1SS133
CN413
H
TO DIODE BOARD
IC1
FM/AM TUNER
TUNER-IC
IC1 TA2008AN
AM RF-IN
FM RF-OUT
AM OSC
FM OSC
VCC1
OSC-OUT
IF-OUT
DET-OUT
MPX-IN
LPF1 /BAND
LPF2 /MO-ST
VCO
FM RF-IN
GND1
MIX-OUT
AGC
VCC2
FM IF-IN
AM IF-IN
GND2
QUAD
ST-IND
L-OUT
R-OUT
【RELAY BOARD】
CN410 3P
BPF
FL1 GFMB3
R11 4.7k
R13 100
R53 0
CF1
CF2
CF3
CFT1
C45 0.1μ
C12 4.7μ 50
C13 100μ 10V
C14 0.01
R14 47
C17 0.01
C20 0.015μ 50 B
C22 0.015μ 50 B
C24 1μ 50V
C23 1μ 50V
R20 10k
R19 10k
C50 220p
C27 0.01 B
C28 0.01 B
R21 10k
R22 10k
R16 1k
C25 0.001 50V B
C26 0.01 50V B
LW-H
MW-H
C46 220p
R28 10k
C31 10p 50V CH
C32 10p 50V CH
X1
C33 0.33
R23 4.7k
R27 10k
R30 6.8k
C35 470p
IC2 LC72137
IC2
PLL
X OUT
X IN
LP-OUT
LP-IN
CE
DI
CK
DO
R24 100
R25 100
R26 100
R29 100
16

6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

P, UK MODEL)


CT1, CT2
LW TRACKING
D3
KV1520TL00
CT4, CT5
MW TRACKING
L3
R47 68k
LW-F-COVER
Q2
DTC343TK
SWITCH
Q3
2SC2413K
SWITCH
Q4
2SC2413K
SWITCH
CT1 45p
C1 68p CH
CT2 5p
C4 3p CJ
C2 0.022
R7 10k
R8 220k
C6 430p CH
CT4 45p
C7 330p CH
C10 12p UJ
CT5 10p
C38 0.22
R2 2.2k
R3 4.7k
R9 4.7k
0(0)<0.7>
0(4.9)<0>
C47 100p
C51 220p
B+
AM-OSC
MW-H
LW-H
GND
VCC1
VT
L1, CT3
FM TRACKING
C41 0.01
R5 100k
R6 100k
CT3 10p
C5 0.01μ
R10 2.2k
R12 15k
C9 6p CH
L2
C43 0.01
L1 FM-RF
D1 KV1470TL1-3
D2 KV1470TL1-3
C8 15p CH
FM-OSC
R54 33
R48 0
5.4 (5.9)
L2
FM F-COVER
C15 0.001
Q6
DTC114YKA-T146
10K/47K
LPF
Q7
FMG9A-T146
10K/10K
SWITCH
0.1 (2.9)
4 (0)
0 (2.7)
C18 0.068μ X
C19 0.082μ X
R17 22k
C21 0.082μ X
CF4
R18 2.2k
4.1 (4.5)
VREF
C16 10μ 50V
AM-H
MONO-H
MUTE-H
24 AM RF-IN
23 3.7 (5.9) FM RF-OUT
22 3.7 (5.9) AM OSC
21 5.4 (5.9) FM OSC
20 5.4 (5.9) VCC1
19 4.3 (4.9) OSC-OUT
18 4.0 (4.5) IF-OUT
17 1.0 (1.6) DET-OUT
16 1.4 MPX-IN
15 4 (0) LPF1 /BAND
14 LPF2 /MO-ST
13 4.8 (5.3) VCO
TUNER-IC
IC1 TA2008AN
1 0.7 (0) FM RF-IN
2 GND1
3 0.7 (0.2) MIX-OUT
4 1.8 (1.5) AGC
5 5.4 (5.9) VCC2
6 5.4 (5.9) FM IF-IN
7 4.4 (5.9) AM IF-IN
8 GND2
9 4 (4.9) QUAD
10 4.8 ST-IND
11 1.5 L-OUT
12 1.5 R-OUT
IC1
FM/AM TUNER
C50 220p
C12 4.7μ 50
R13 100
R53 0
CF1
CF2
CF3
BPF
FL1 GFMB3
R11 4.7k
CFT1
C45 0.1μ
C13 100μ 10V
C14 0.01
R14 47
C17 0.01
C20 0.015μ 50 B
C22 0.015μ 50 B
C24 1μ 50V
R20 10k
C23 1μ 50V
R19 10k
R21 10k
R22 10k
C27 0.01 B
C28 0.01 B
LW-H
MW-H
JI
350
R16 1k
C25 0.001 50V B
C26 0.01 50V B
C53 0.01
CN1
12
1
S-GND
GND
PLL-VCC
RADIO DATA
RCLK
COUNT DATA
CE
TU-VCC
IF/MUTE
R-CH
L-CH
C
TO MAIN BOARD CN803
R4 100
C11 1μF 16V F
VT-VCC
C46 220p
C31 10p 50V CH
C32 10p 50V CH
X1
R28 10k
R32 820
R34 10k
C33 0.33
R31 3.3k
C35 470p 6.3
C34 0.01
R33 220
C36 0.001
C37 0.01
R23 4.7k
R27 10k
R30 6.8k
20 1.6 (1.8) X OUT
19 0.9 (1.5) X IN
18 2.5 (0.8) <0.5> LP-OUT
17 0.7 LP-IN
16 0.7 PD
15 VSS
14 3.1 (3.7) VDD
13 0 (2.7) MO/ST
12 1.4 (0) FM-IN
11 0 (1.8) AM-IN
IC2 LC72137
IC2
PLL
1 0.1 CE
2 0 DI
3 0.1 CK
4 4.8 DO
5 LW-L
6 MW-L
7 0 (2.6) BAND
8 4.8 ST-IND
9 IF-IN
10 0
R24 100
R25 100
R26 100
R29 100
6.7(6.2) <0>
6.7(0)<6.2>
6.7(6.3)<6.2>
Q11
FMA5A
2.2K/47K
INVERTER
R39 10k
R35 10k
0(6.3)<0>
0(0)<6.2>

Note on Schematic Diagram:
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¹⁄₄ W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  (   ) : MW or MW/LW
  <   > : LW
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM

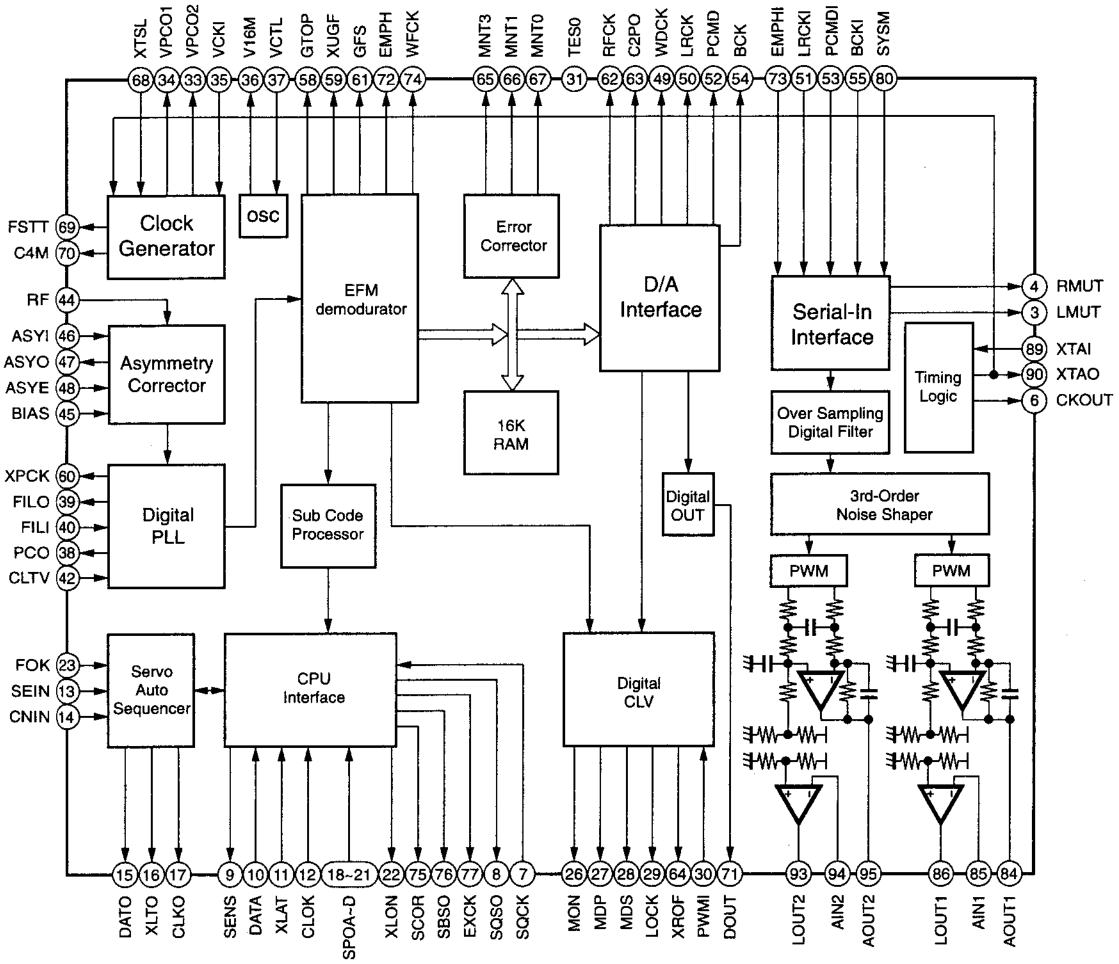
7-18. IC PIN FUNCTION DESCRIPTION

- **IC801 CXP84332-074Q**

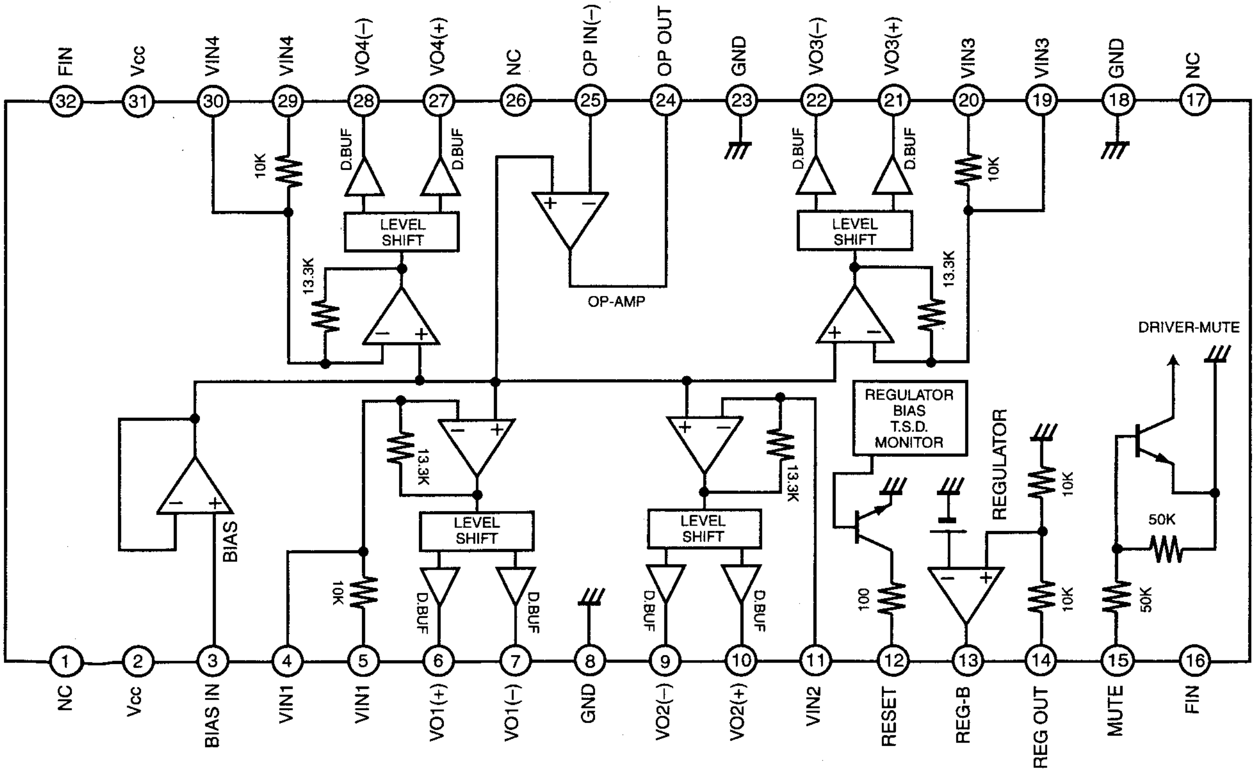
Pin No.	Pin Name	I/O	Description
1 to 5	PF3 to PF7	I/O	8-bit input/output port
6 to 13	PD0 to PD7	I/O	8-bit input/output port
14 to 21	PC0 to PC7	I/O	8-bit input/output port
22 to 29	PH0 to PH7	I/O	8-bit input/output port
30	$\overline{\text{RST}}$	I/O	System reset terminal of "L" level active
31	EXTAL	I	External crystal for system clock is connected to this terminal
32	XTAL	O	External crystal for system clock is connected to this terminal
33	Vss	I/O	Ground
34	TX	O	External cystal for 32 kHz clock of timer/counter is connected to this terminal
35	TEX	I	External cystal for 32 kHz clock of timer/counter is connected to this terminal
36	AVss	–	Ground terminal of AD converter
37	AVREF	I	Reference voltage input terminal of AD converter
38 to 45	PA0/AN0 to PA7/AN7	I/O	Analog input terminal to AD converter
46	PB0/CINT	I	External capture of 16-bit timer/counter is input to this terminal
47	PB1/$\overline{\text{CS0}}$	I	Chip select input terminal of serial interface (CH0)
48	PB2/$\overline{\text{SCK0}}$	I/O	Serial clock (CH0) input/output terminal
49	PB3/SI0	I	Serial data (CH0) input terminal
50	PB4/SO0	O	Serial data (CH0) output terminal
51	PB5/$\overline{\text{SCK1}}$	I/O	Serial clock (CH1) input/output terminal
52	PB6/SI1	I	Serial data (CH1) input terminal
53	PB7/SO1	O	Serial data (CH1) output terminal
54	PE0/$\overline{\text{EC0}}$	I	Extermal event of timer/counter is input to this terminal
55	PE1/$\overline{\text{EC1}}$	I	Extermal event of timer/counter is input to this terminal
56	PE2/RMC	I	Input terminal to remote control signal reception
57	PE3/$\overline{\text{NMI}}$	I	Non-maslcable interrupt request input terminal
58	PE4/$\overline{\text{PWM}}$	O	Output terminal of 14-bit PWM
59	PE5/TO/ADJ	O	Short corrugated output of 16-bit timer/counter, for frequency input of 32 kHz outgoing and terminal
60 to 63	P10/INT0 to PI3/INT3	I	External interrupt request input terminal
64 to 67	PI4 to PI7	I/O	8-bit input/output port
68 to 71	PF0 to PF7	I/O	8-bit input/output port
72	VDD	–	Positive power source supply terminal
73	NC	–	NC terminal
74 to 77	PG0 to PG7	I/O	8-bit input/output port
78 to 80	PH0 to PH7	I/O	8-bit input/output port

7-19. IC BLOCK DIAGRAMS

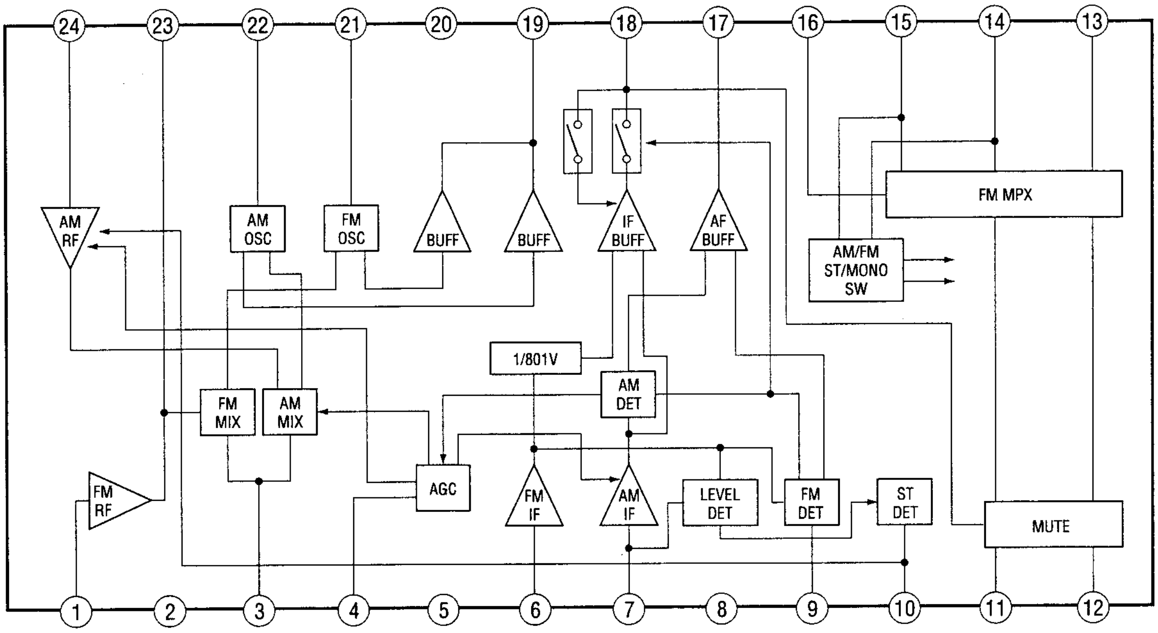
IC703 CXD2529Q


XTSL 68
VPCO1 34
VPCO2 33
VCKI 35
V16M 36
VCTL 37
GTOP 58
XUGF 59
GFS 61
EMPH 72
WFCK 74
MNT3 65
MNT1 66
MNT0 67
TES0 31
RFCK 62
C2PO 63
WDCK 49
LRCK 50
PCMD 52
BCK 54
EMPHI 73
LRCKI 51
PCMDI 53
BCKI 55
SYSM 80
FSTT 69
C4M 70
RF 44
ASYI 46
ASYO 47
ASYE 48
BIAS 45
XPCK 60
FILO 39
FILI 40
PCO 38
CLTV 42
FOK 23
SEIN 13
CNIN 14
Clock Generator
OSC
EFM demodurator
Error Corrector
16K RAM
D/A Interface
Serial-In Interface
Timing Logic
Over Sampling Digital Filter
3rd-Order Noise Shaper
PWM
PWM
Asymmetry Corrector
Digital PLL
Sub Code Processor
Digital OUT
Servo Auto Sequencer
CPU Interface
Digital CLV
4 RMUT
3 LMUT
89 XTAI
90 XTAO
6 CKOUT
15 DATO
16 XLTO
17 CLKO
9 SENS
10 DATA
11 XLAT
12 CLOK
18~21 SPOA~D
22 XLON
75 SCOR
76 SBSO
77 EXCK
8 SQSO
7 SQCK
26 MON
27 MDP
28 MDS
29 LOCK
64 XROF
30 PWMI
71 DOUT
93 LOUT2
94 AIN2
95 AOUT2
86 LOUT1
85 AIN1
84 AOUT1

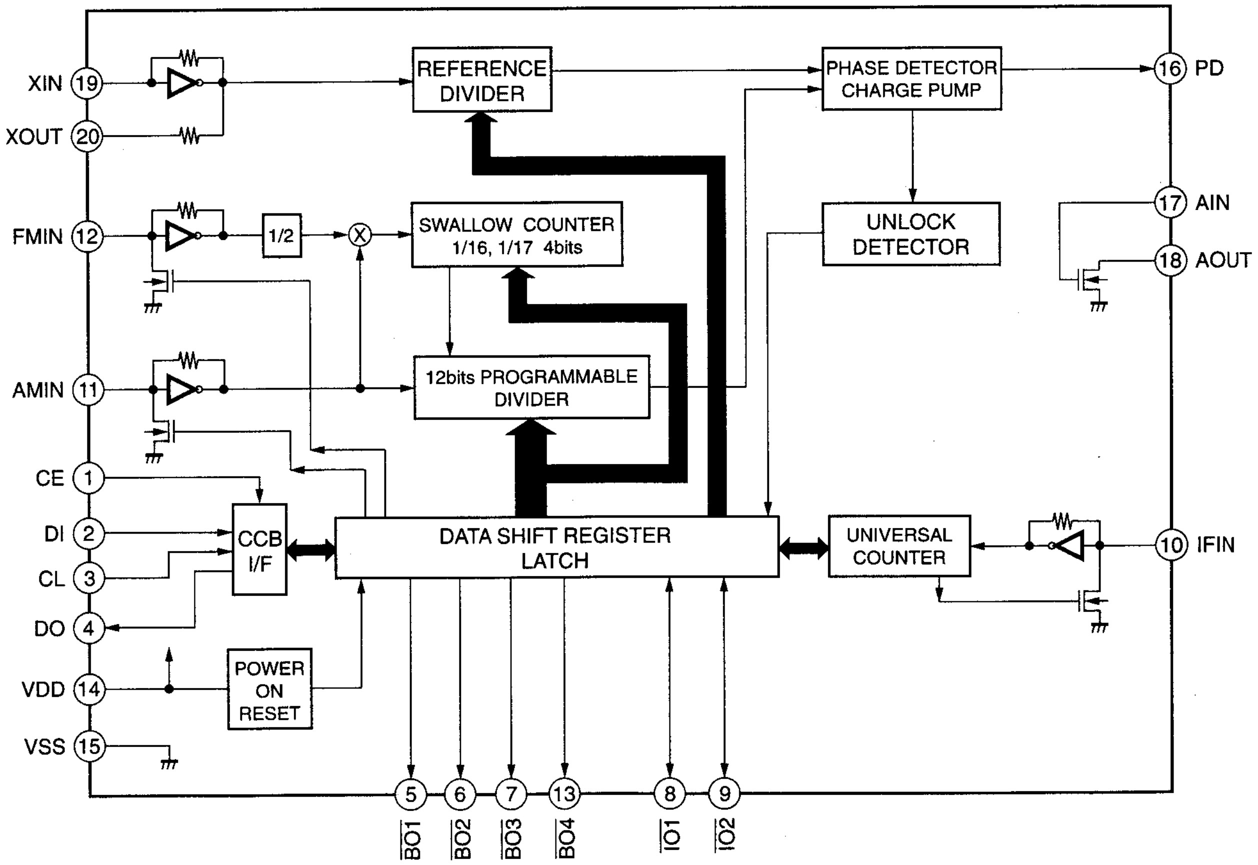
IC702 BA6898FP-E2


FIN 32
Vcc 31
VIN4 30
VIN4 29
VO4(−) 28
VO4(+) 27
NC 26
OP IN(−) 25
OP OUT 24
GND 23
VO3(−) 22
VO3(+) 21
VIN3 20
VIN3 19
GND 18
NC 17
10K
D.BUF
D.BUF
LEVEL SHIFT
13.3K
OP-AMP
D.BUF
D.BUF
LEVEL SHIFT
10K
13.3K
DRIVER-MUTE
BIAS
13.3K
LEVEL SHIFT
D.BUF
D.BUF
13.3K
LEVEL SHIFT
D.BUF
D.BUF
REGULATOR BIAS T.S.D. MONITOR
REGULATOR
10K
10K
100
10K
50K
50K
1 NC
2 Vcc
3 BIAS IN
4 VIN1
5 VIN1
6 VO1(+)
7 VO1(−)
8 GND
9 VO2(−)
10 VO2(+)
11 VIN2
12 RESET
13 REG-B
14 REG OUT
15 MUTE
16 FIN

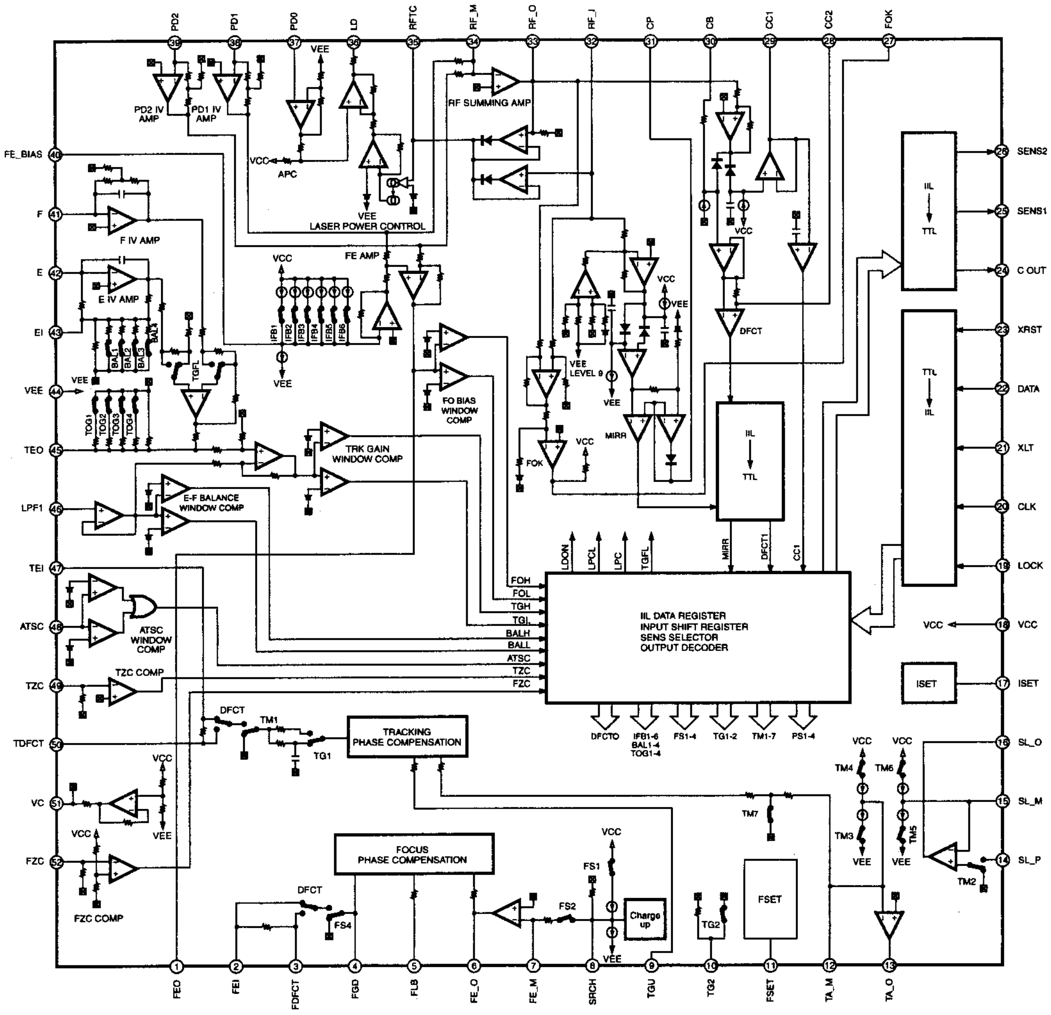
IC1 TA2008AN


24
23
22
21
20
19
18
17
16
15
14
13
AM RF
AM OSC
FM OSC
BUFF
BUFF
IF BUFF
AF BUFF
FM MPX
AM/FM ST/MONO SW
1/801V
AM DET
FM MIX
AM MIX
AGC
FM RF
FM IF
AM IF
LEVEL DET
FM DET
ST DET
MUTE
1
2
3
4
5
6
7
8
9
10
11
12

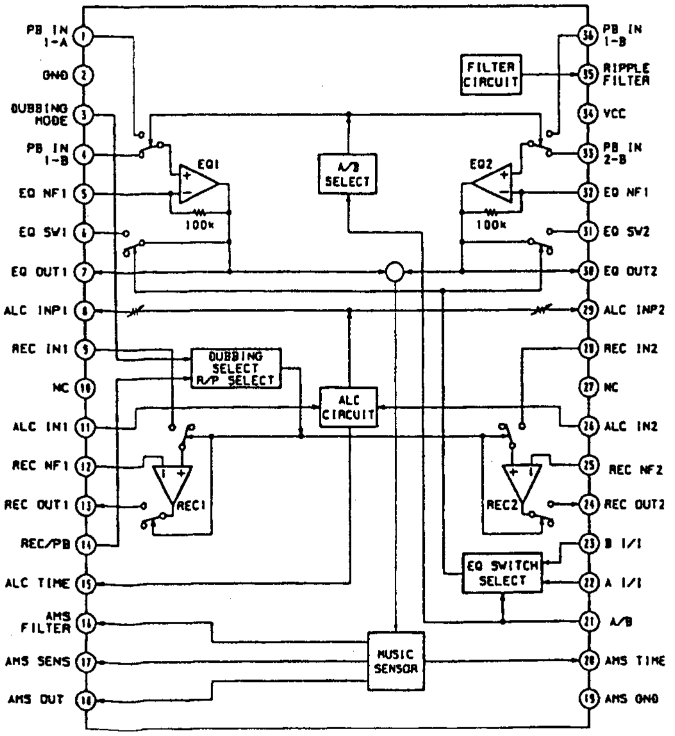
IC2 LC72137M


XIN 19
XOUT 20
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
16 PD
FMIN 12
1/2
SWALLOW COUNTER 1/16, 1/17 4bits
UNLOCK DETECTOR
17 AIN
18 AOUT
AMIN 11
12bits PROGRAMMABLE DIVIDER
CE 1
DI 2
CL 3
DO 4
CCB I/F
DATA SHIFT REGISTER LATCH
UNIVERSAL COUNTER
10 IFIN
VDD 14
POWER ON RESET
VSS 15
5
6
7
13
8
9
$\overline{\text{BO1}}$
$\overline{\text{BO2}}$
$\overline{\text{BO3}}$
$\overline{\text{BO4}}$
$\overline{\text{IO1}}$
$\overline{\text{IO2}}$

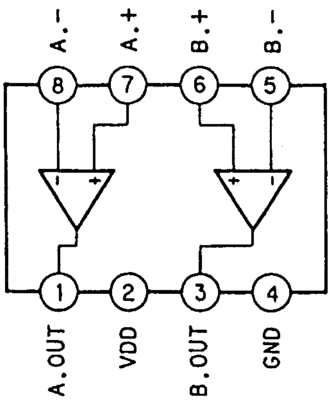
IC701 CXA1992BR


PD2
PD1
PD0
LD
RFTC
RF_M
RF_O
RF_I
CP
CB
CC1
CC2
FOK
FE_BIAS
F
E
EI
VEE
TEO
LPF1
TEI
ATSC
TZC
TDFCT
VC
FZC
SENS2
SENS1
C OUT
XRST
DATA
XLT
CLK
LOCK
VCC
ISET
SL_O
SL_M
SL_P
FEO
FEI
FDFCT
FGD
FLB
FE_O
FE_M
SRCH
TGU
TG2
FSET
TA_M
TA_O
PD2 IV AMP
PD1 IV AMP
APC
LASER POWER CONTROL
RF SUMMING AMP
F IV AMP
E IV AMP
FE AMP
BAL1
BAL2
BAL3
BAL4
TOG1
TOG2
TOG3
TOG4
TGFL
IFB1
IFB2
IFB3
IFB4
IFB5
IFB6
FO BIAS WINDOW COMP
TRK GAIN WINDOW COMP
E-F BALANCE WINDOW COMP
ATSC WINDOW COMP
TZC COMP
FZC COMP
VEE LEVEL S
MIRR
DFCT
IIL → TTL
TTL → IIL
LDON
LPCL
LPC
TGFL
MIRR
DFCT1
CC1
FOH
FOL
TGH
TGL
BALH
BALL
ATSC
TZC
FZC
IIL DATA REGISTER
INPUT SHIFT REGISTER
SENS SELECTOR
OUTPUT DECODER
DFCTO
IFB1-6
BAL1-4
TOG1-4
FS1-4
TG1-2
TM1-7
PS1-4
ISET
DFCT
TM1
TG1
TRACKING PHASE COMPENSATION
FOCUS PHASE COMPENSATION
FS1
FS2
FS4
Charge up
TG2
FSET
TM2
TM3
TM4
TM5
TM6
TM7
VCC
VEE
FOK

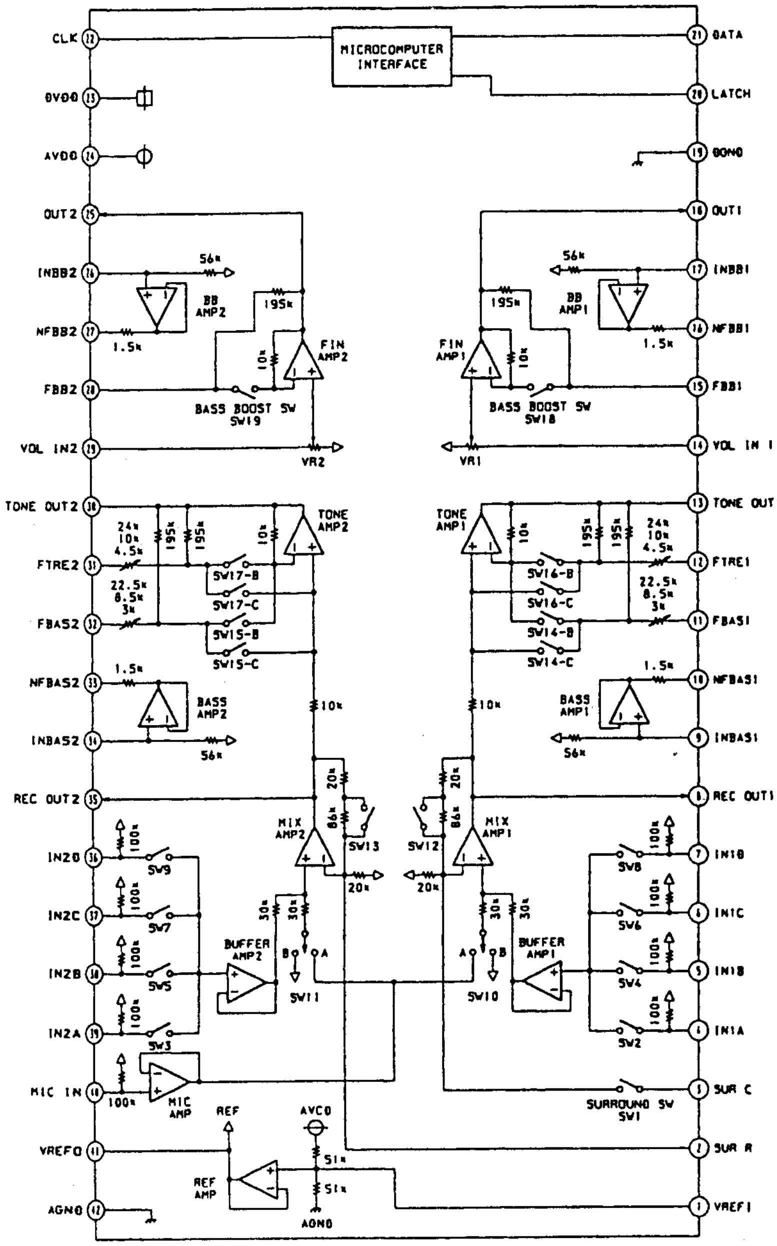
IC301 M51167BFP


PB IN 1-A
GND
DUBBING MODE
PB IN 1-B
EQ NF1
EQ SW1
EQ OUT1
ALC INP1
REC IN1
NC
ALC IN1
REC NF1
REC OUT1
REC/PB
ALC TIME
AMS FILTER
AMS SENS
AMS OUT
PB IN 1-B
RIPPLE FILTER
VCC
PB IN 2-B
EQ NF1
EQ SW2
EQ OUT2
ALC INP2
REC IN2
NC
ALC IN2
REC NF2
REC OUT2
B I/I
A I/I
A/B
AMS TIME
AMS GND
FILTER CIRCUIT
EQ1
EQ2
A/B SELECT
100k
100k
DUBBING SELECT R/P SELECT
ALC CIRCUIT
REC1
REC2
EQ SWITCH SELECT
MUSIC SENSOR

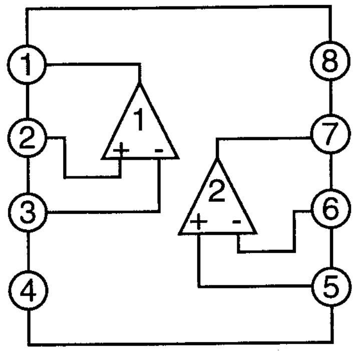
IC354 NJM2073M


A.-
A.+
B.+
B.-
8
7
6
5
1
2
3
4
A.OUT
VDD
B.OUT
GND

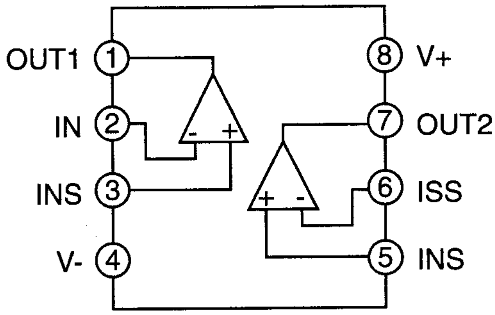
IC352 M62428AFP600C


CLK 22
DVDD 23
AVDD 24
OUT2 25
INBB2 26
NFBB2 27
FBB2 28
VOL IN2 29
TONE OUT2 30
FTRE2 31
FBAS2 32
NFBAS2 33
INBAS2 34
REC OUT2 35
IN2D 36
IN2C 37
IN2B 38
IN2A 39
MIC IN 40
VREFO 41
AGND 42
MICROCOMPUTER INTERFACE
21 DATA
20 LATCH
19 DGND
18 OUT1
17 INBB1
16 NFBB1
15 FBB1
14 VOL IN 1
13 TONE OUT1
12 FTRE1
11 FBAS1
10 NFBAS1
9 INBAS1
8 REC OUT1
7 IN1D
6 IN1C
5 IN1B
4 IN1A
3 SUR C
2 SUR R
1 VREF1
56k
195k
1.5k
BB AMP2
BB AMP1
FIN AMP2
FIN AMP1
10k
BASS BOOST SW SW19
BASS BOOST SW SW18
VR2
VR1
TONE AMP2
TONE AMP1
24k 10k 4.5k
22.5k 8.5k 3k
SW17-B
SW17-C
SW15-B
SW15-C
SW16-B
SW16-C
SW14-B
SW14-C
BASS AMP2
BASS AMP1
20k
86k
MIX AMP2
MIX AMP1
SW13
SW12
100k
SW9
SW7
SW5
SW3
SW8
SW6
SW4
SW2
30k
BUFFER AMP2
BUFFER AMP1
SW11
SW10
B A
MIC AMP
REF
AVCC
51k
REF AMP
AGND
SURROUND SW SW1

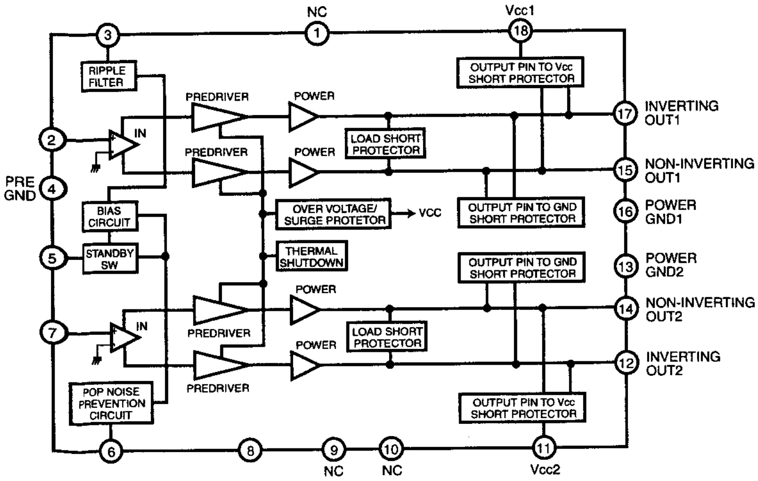
IC351 M5218AFP



IC355 UPC4558G2


OUT1 1
IN 2
INS 3
V- 4
8 V+
7 OUT2
6 ISS
5 INS
-
+

IC353 LA4705NA


3
NC 1
Vcc1 18
RIPPLE FILTER
OUTPUT PIN TO Vcc SHORT PROTECTOR
PREDRIVER
POWER
17 INVERTING OUT1
2
IN
LOAD SHORT PROTECTOR
15 NON-INVERTING OUT1
PRE GND 4
BIAS CIRCUIT
OVER VOLTAGE/ SURGE PROTETOR
VCC
OUTPUT PIN TO GND SHORT PROTECTOR
16 POWER GND1
5
STANDBY SW
THERMAL SHUTDOWN
13 POWER GND2
14 NON-INVERTING OUT2
7
12 INVERTING OUT2
POP NOISE PREVENTION CIRCUIT
6
8
9 NC
10 NC
11 Vcc2

SECTION 8
EXPLODED VIEWS

NOTE:

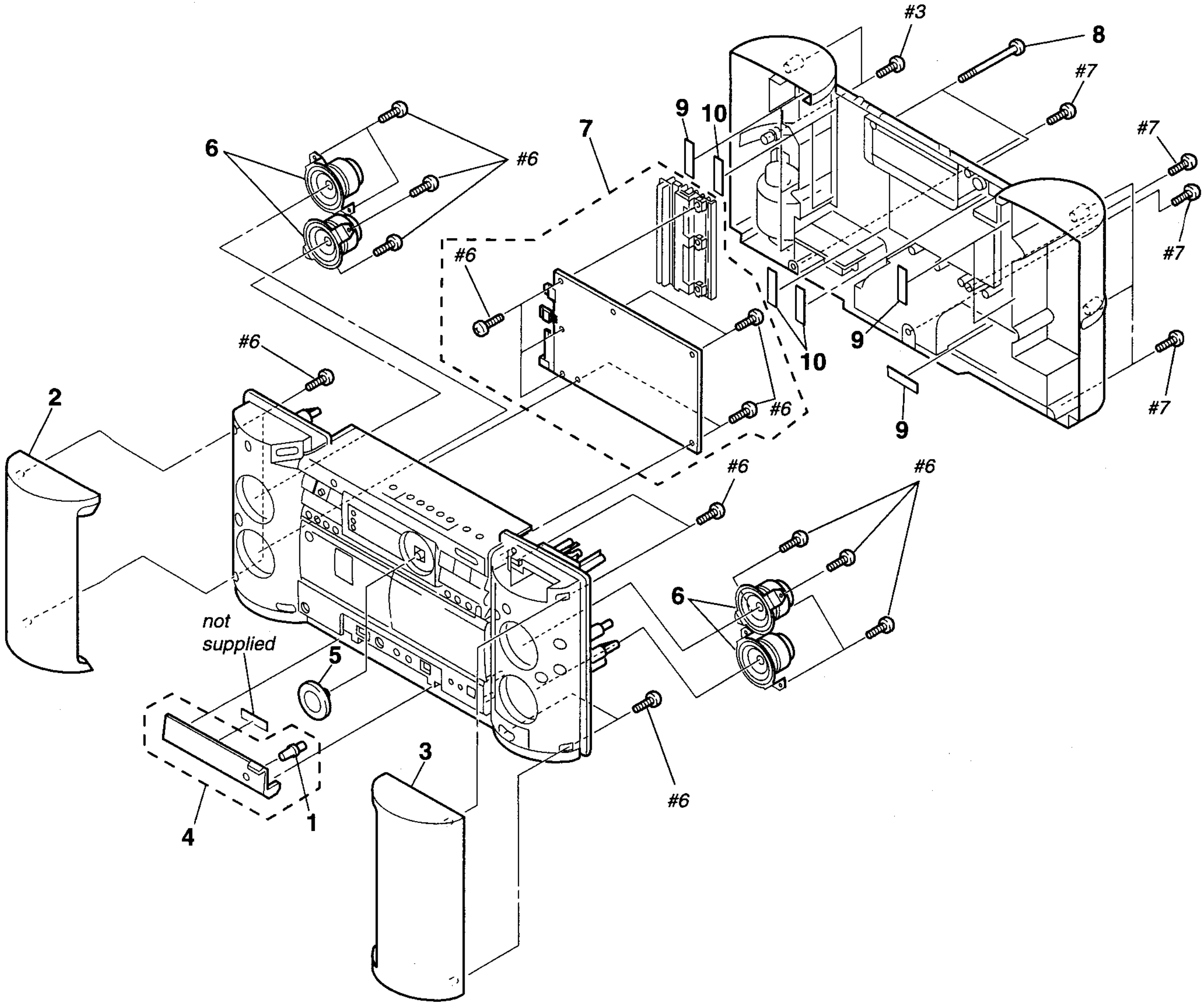
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  CND : Canadian
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts of Color Cabinet's Color

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

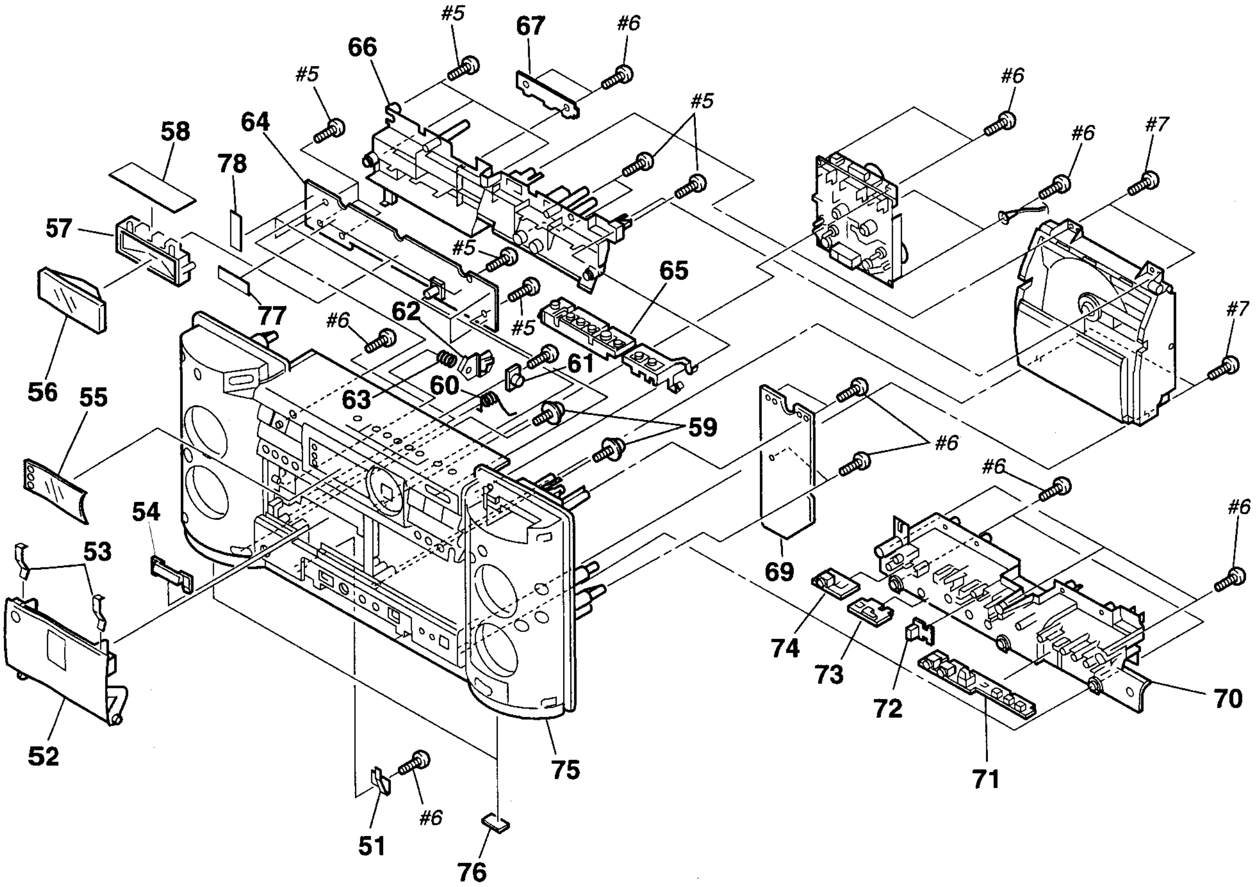
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1. CABINAT (FRONT) SECTION



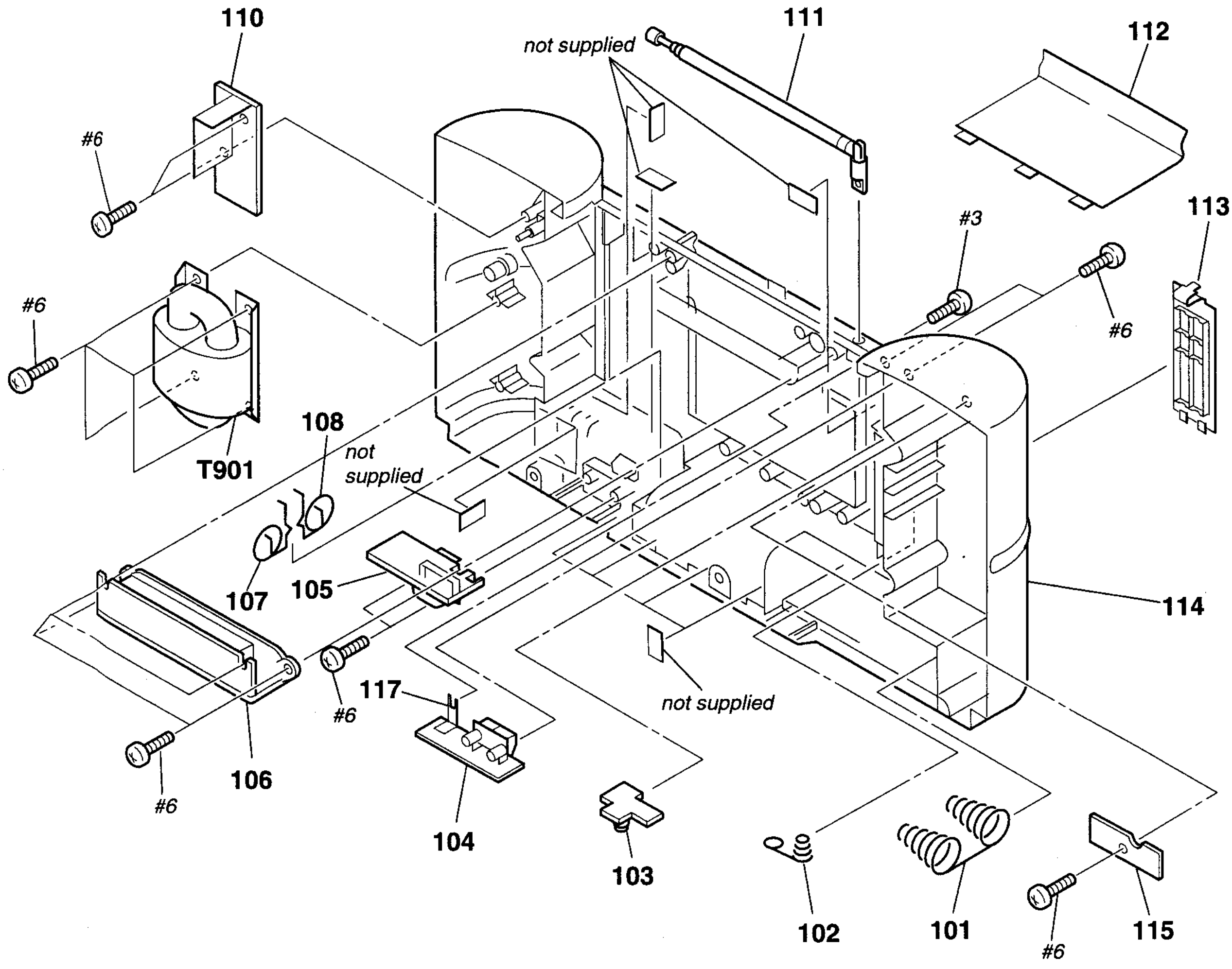
Ref. No.	Part No.	Description	Remarks
1	3-939-002-01	WINDOW, DIGITAL (OUT)	
2	X-3374-247-1	NET (L) ASSY, SP	
3	X-3374-248-1	NET (R) ASSY, SP	
4	X-3374-249-1	LID ASSY, JACK	
5	3-017-512-01	DIAL, JOG	
6	1-505-764-11	SPEAKER (5CM)	
* 7	A-3293-896-A	MAIN BOARD, COMPLETE (US,CND)	
* 7	A-3293-898-A	MAIN BOARD, COMPLETE (AEP,UK)	
8	4-926-715-21	SCREW (3X62), TAPPING	
* 9	3-378-109-01	CUSHION, SARANET	
* 10	3-378-433-01	CUSHION, SARANET	

8-2. CABINET (REAR) SECTION 1



Ref. No.	Part No.	Description	Remarks
51	3-017-885-01	SPRING, JACK LID	
52	3-017-509-01	HOLDER, CASSETTE	
53	3-017-524-01	SPRING, CASSETTE RETAINER	
54	3-017-884-01	COVER, HEAD	
55	3-017-511-01	WINDOW, LCD	
56	1-475-317-11	LCD UNIT	
* 57	3-017-514-01	HOLDER, LCD	
* 58	1-667-145-11	LAMP BOARD (US,CND)	
* 58	1-667-145-21	LAMP BOARD (AEP,UK)	
60	3-017-523-01	SPRING, CASSETTE-UP	
61	3-351-377-11	DAMPER	
62	3-017-513-01	CATCHER, PUSH	
63	3-939-031-01	SPRING, PUSH CATCHER RETURN	
* 64	A-3321-259-A	CONTROL BOARD, COMPLETE (AEP,UK)	
* 64	A-3321-268-A	CONTROL BOARD, COMPLETE (US,CND)	
65	3-017-503-01	BUTTON (JOG)	
66	3-017-517-01	CHASSIS	
* 67	1-668-263-11	MD REG BOARD (US,CND)	
* 67	1-668-263-21	MD REG BOARD (AEP,UK)	
* 69	A-3293-897-A	RADIO BOARD, COMPLETE (US,CND)	
* 69	A-3293-899-A	RADIO BOARD, COMPLETE (AEP,UK)	
70	3-017-516-01	CASE, BATTERY	
* 71	1-667-148-11	JACK BOARD (US,CND)	
* 71	1-667-148-21	JACK BOARD (AEP,UK)	
* 72	1-667-149-11	DC OUT BOARD (US,CND)	
* 72	1-667-149-21	DC OUT BOARD (AEP,UK)	
* 73	1-670-309-11	MD JACK BOARD (US,CND)	
* 73	1-670-309-21	MD JACK BOARD (AEP,UK)	
* 74	1-667-151-11	H/P BOARD (US,CND)	
* 74	1-667-151-21	H/P BOARD (AEP,UK)	
75	X-3374-246-1	CABINET (FRONT) SUB ASSY (US,CND)	
75	X-3375-421-1	CABINET (FRONT) SUB ASSY (AEP,UK)	
76	3-020-959-01	FOOT, RUBBER	
77	3-378-138-01	CUSHION, SARANET	
78	3-378-434-01	CUSHION, SARANET	

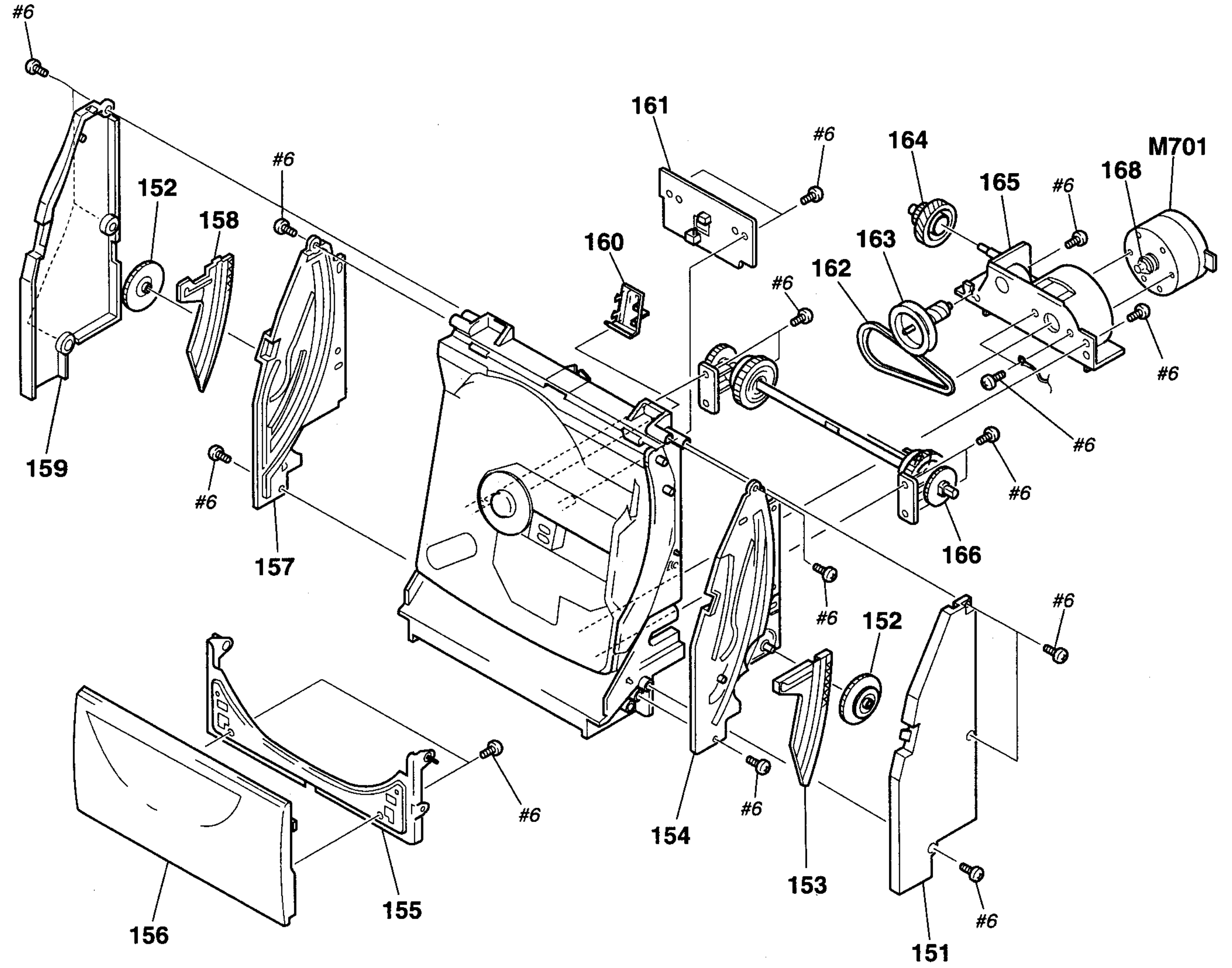
8-3. CABINET (REAR) SECTION 2



Ref. No.	Part No.	Description	Remarks
101	3-017-519-01	TERMINAL (+) (-), BATTERY	
102	3-017-530-01	TERMINAL (+) (-) (BU), BATTERY	
* 103	1-667-155-11	PWB, BATT BOARD (US,CND)	
* 103	1-667-155-21	PWB, BATT BOARD (AEP,UK)	
* 104	1-667-152-11	PWB, EXT ANT (US,CND)	
* 104	1-667-152-21	PWB, EXT ANT (AEP,UK)	
* 105	1-667-146-11	PWB, AC INLET BOARD (US,CND)	
* 105	1-667-146-21	PWB, AC INLET BOARD (AEP,UK)	
106	3-017-518-01	COVER, HANDLE	
107	3-017-521-01	TERMINAL (-), BATTERY	
108	3-017-520-01	TERMINAL (+), BATTERY	
* 110	1-667-147-11	DIODE BOARD (US,CND)	
* 110	1-667-147-21	DIODE BOARD (AEP,UK)	
111	1-501-968-11	ANTENNA, TELESCOPIC	
112	3-017-515-01	LID, BATTERY CASE	
113	3-017-529-01	LID (BU), BATTERY CASE	
114	3-017-499-11	CABINET (REAR)	
* 115	1-667-664-11	PWB, RELAY (US,CND)	
* 115	1-667-664-21	PWB, RELAY (AEP,UK)	
117	3-017-528-01	TERMINAL, ANTENNA	
⚠T901	1-431-862-11	TRANSFORMER, POWER (US,CND)	
⚠T901	1-431-863-11	TRANSFORMER, POWER (AEP,UK)	

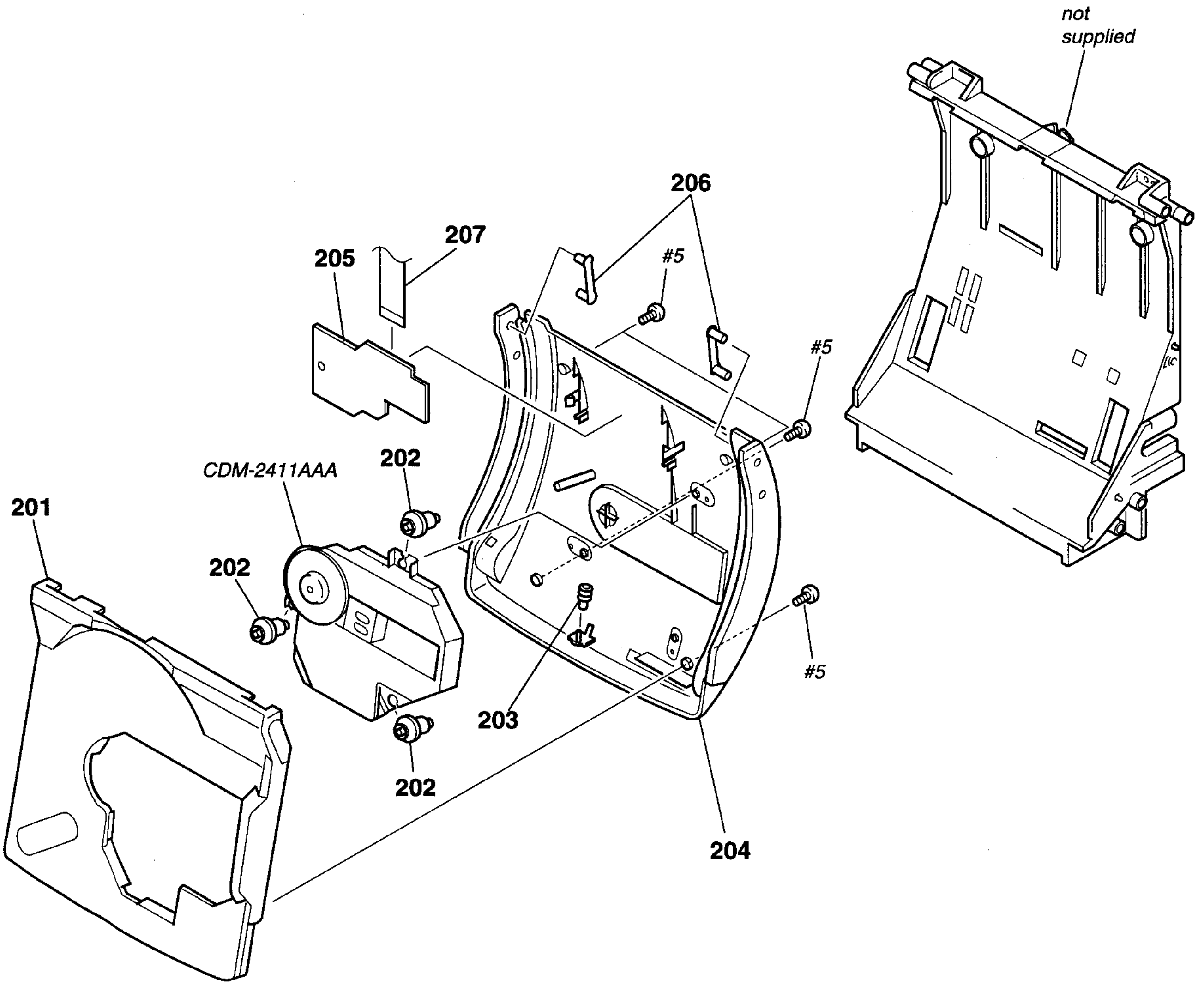
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-4. CD CHASSIS SECTION 1 (VLM-ZSD7-142)


#6
161
#6
164
M701
165
#6
168
152
#6
158
160
163
#6
162
#6
#6
159
#6
#6
157
166
#6
#6
152
#6
#6
154
#6
153
155
156
#6
151

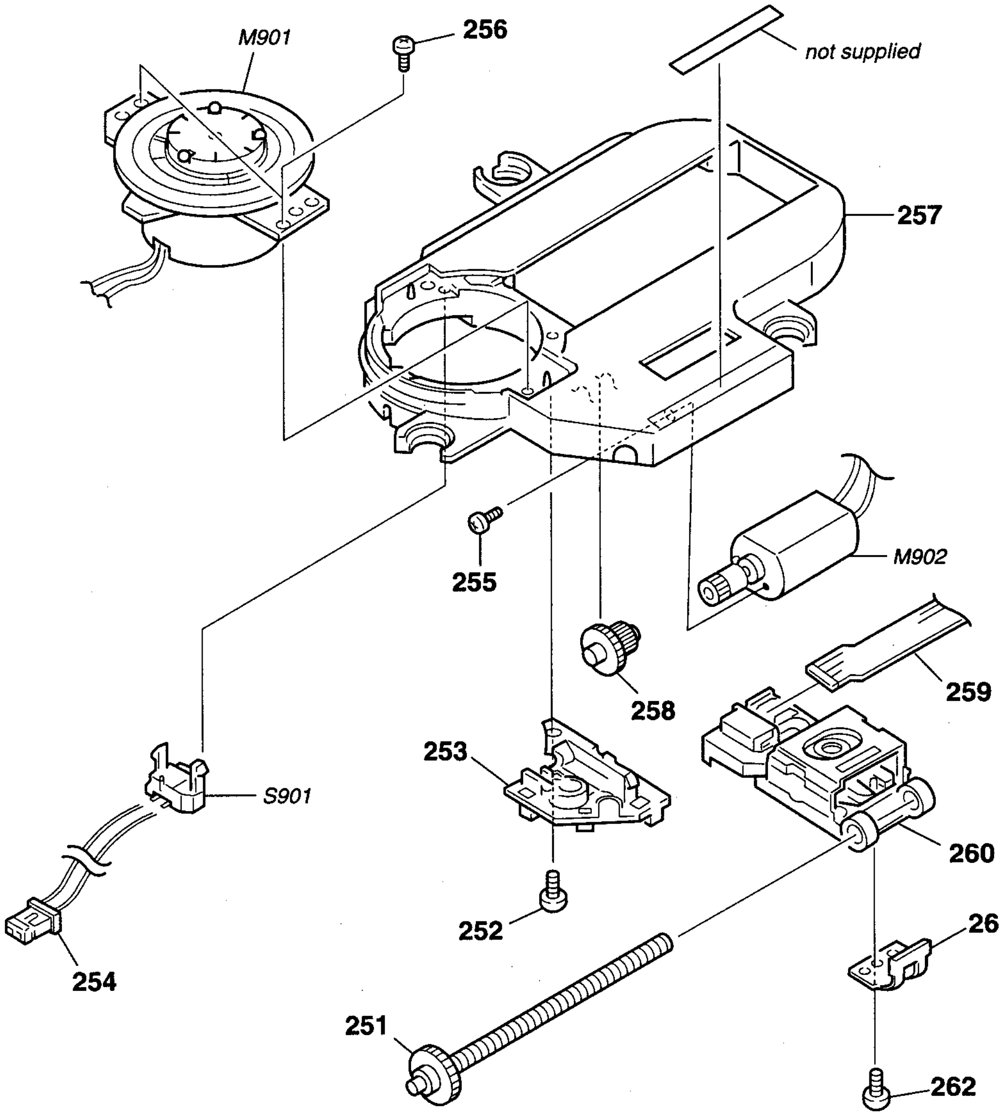
Ref. No.	Part No.	Description	Remarks
* 151	3-017-025-01	COVER (R), SIDE	
152	3-017-027-01	GEAR (C)	
* 153	3-017-014-01	SLIDER (R)	
* 154	3-017-012-01	PLATE (R), SIDE	
155	X-3374-204-1	WINDOW ASSY, CD	
156	3-017-510-01	LID, CD	
* 157	3-017-011-01	PLATE (L), SIDE	
* 158	3-017-013-01	SLIDER (L)	
* 159	3-017-035-01	COVER (L), SIDE	
160	3-017-017-01	LEVER, DETECTION	
* 161	1-667-045-11	LOADING BOARD	
162	3-017-030-01	BELT	
163	3-017-031-01	GEAR (A)	
164	3-017-032-01	GEAR (B)	
* 165	3-017-036-01	CHASSIS, GEAR	
166	A-3311-798-A	DRIVE ASSY	
168	2-627-174-01	PULLEY (M)	
M701	1-698-999-11	MOTOR, DC	

8-5. CD CHASSIS SECTION 2 (VLM-ZSD7-142)


not supplied
206
207
205
#5
#5
CDM-2411AAA
202
201
202
203
202
#5
204

Ref. No.	Part No.	Description	Remarks
* 201	3-020-624-01	TRAY (TOP), CD	
202	4-975-762-01	INSULATOR	
203	4-975-811-01	INSULATOR	
204	3-017-022-01	TRAY (BOTTOM), CD	
* 205	1-667-046-11	PICKUP RELAY BOARD	
206	3-017-016-01	SHAFT, TRAY	
207	1-782-663-11	WIRE (FLAT TYPE)	
M901	A-3320-300-A	MOTOR ASSY, TURN TABLE	

8-6. OPTICAL PICK-UP SECTION (CDM-2411AAA)

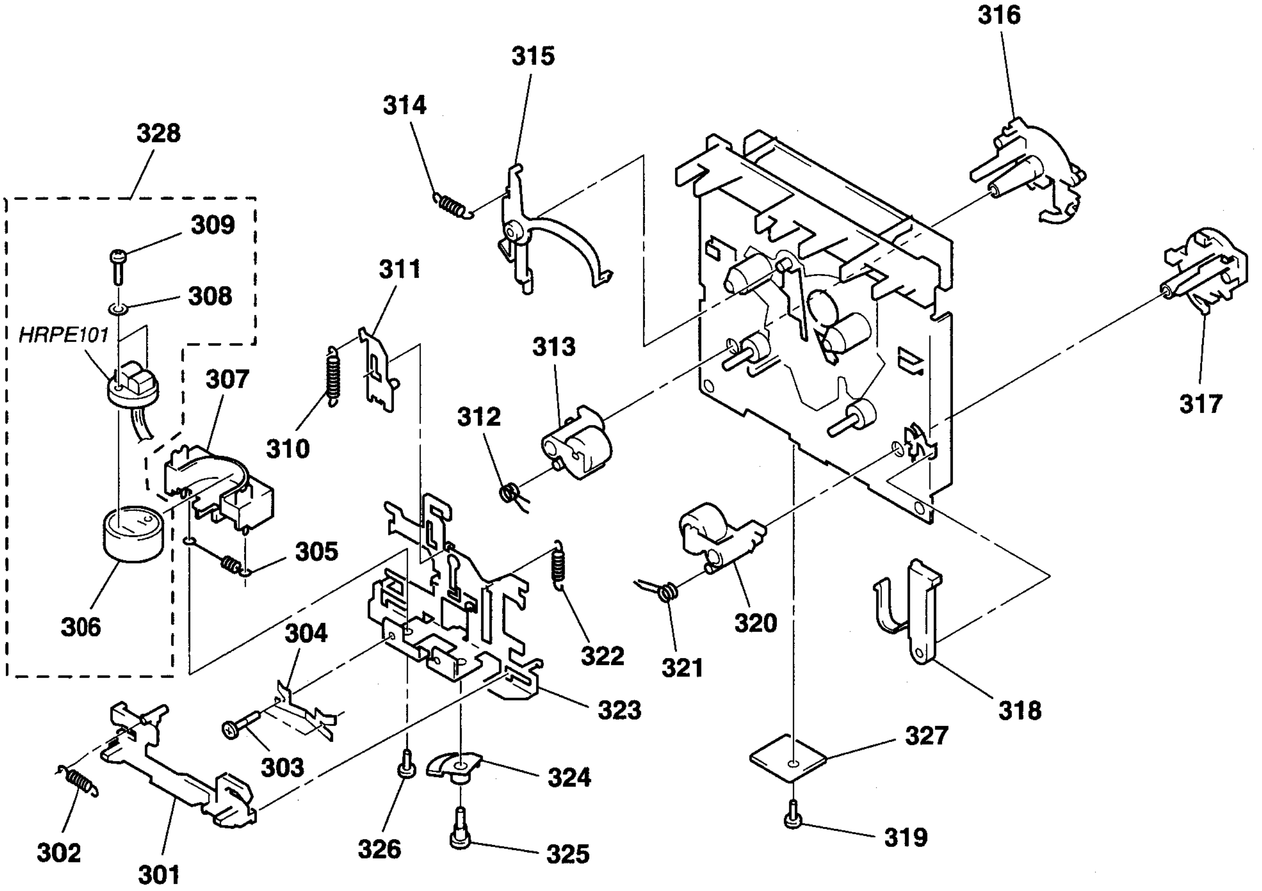


M901
256
not supplied
257
255
M902
258
259
253
S901
260
252
261
254
251
262

Ref. No.	Part No.	Description	Remarks
251	A-3303-970-A	SLED SCREW ASSY	
252	3-318-203-11	SCREW (B1.7 x 6), TAPPING P3 TYPE	
253	4-972-163-04	SLED SPRING	
254	1-690-530-21	LEAD WIRE (WITH CONNECTOR)	
256	3-719-401-11	SCREW (B1.7), TAPPING P3 TYPE	
257	4-972-162-01	CHASSIS	
258	4-974-003-01	GEAR (B)	

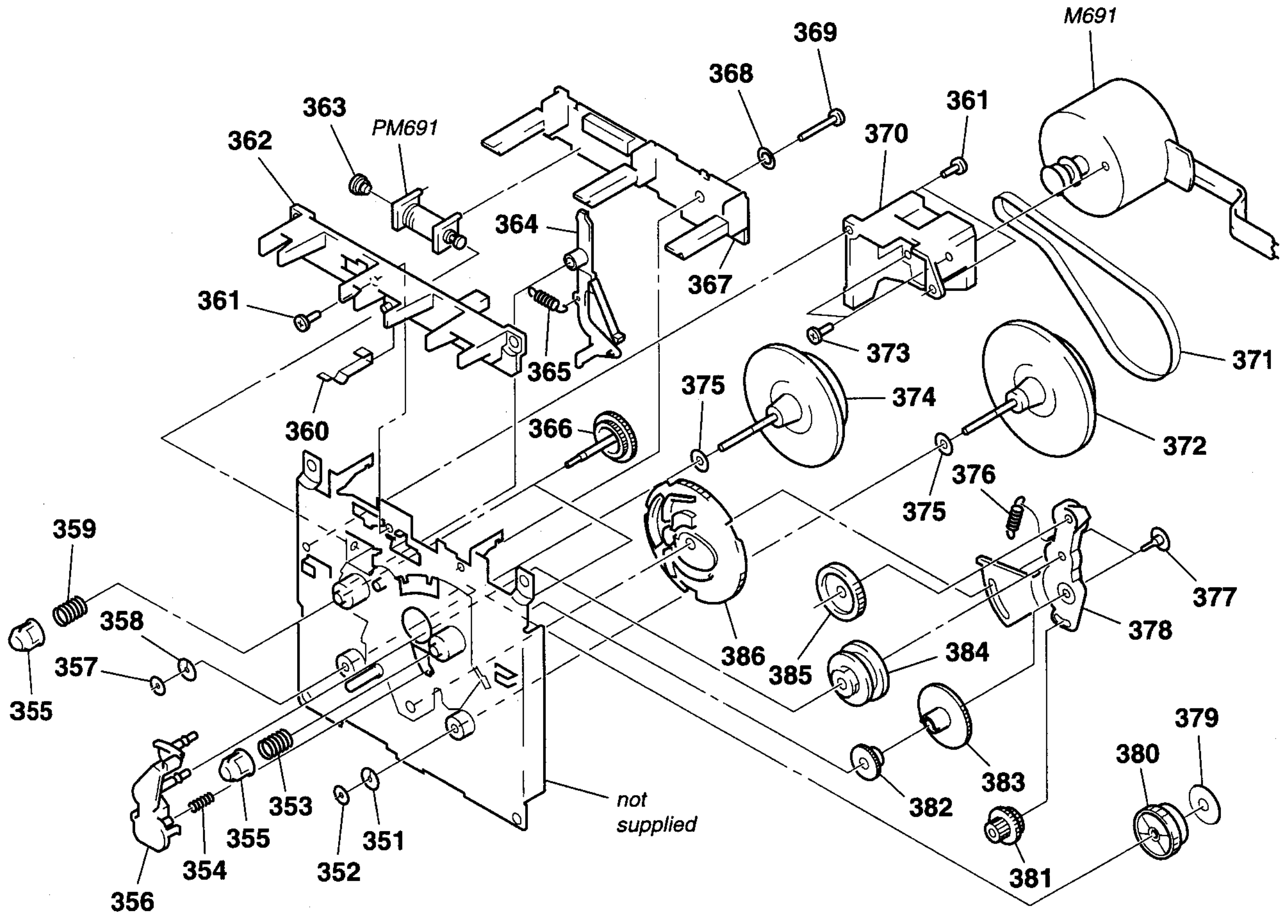
Ref. No.	Part No.	Description	Remarks
259	1-660-965-11	SLIDE FLEXIBLE BOARD	
260	X-4946-311-1	DAX-01A RP ASSY	
261	4-972-165-01	RACK	
262	4-973-631-01	SCREW	
M901	A-3320-330-A	MOTOR ASSY, TURN TABLE	
M902	A-3303-403-A	SLED MOTOR ASSY	
S901	1-571-099-21	SWITCH (1 KEY)	

8-7. MECHANISM DECK SECTION 1 (MF-D7-145)


316
315
314
328
309
308
HRPE101
311
313
307
312
310
317
305
306
304
320
322
321
323
318
327
303
324
302
326
325
319
301

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
301	3-938-905-01	HEAD, LEVER		* 315	3-938-916-01	BRAKE, ARM	
302	3-938-940-01	SPRING (L)		* 316	3-938-914-01	FRAME (C)	
303	3-938-941-01	SCREW (A)		* 317	3-938-913-01	FRAME (B)	
304	3-938-906-01	AZIMUTH, SPRING		* 318	3-938-909-01	LOCK, EJECT	
305	3-017-432-01	SPRING (A)		319	3-938-944-01	SCREW (D)	
306	3-938-901-01	HEAD, HOLDER		321	3-938-937-01	SPRING (I)	
* 307	3-938-904-01	HEAD, FRAME		322	3-938-938-01	SPRING (J)	
308	3-938-902-01	WASHER		* 323	3-938-911-01	HEAD (B), CHASSIS	
309	3-938-903-01	SCREW		324	3-938-907-01	HEAD, GEAR ARM	
310	3-938-935-01	SPRING (G)		325	3-938-943-01	SCREW (C)	
311	X-3374-292-1	ASSIST ASSY, LEVER		326	3-938-942-01	SCREW (B)	
312	3-938-933-01	SPRING (E)		* 327	1-662-743-11	HEAD BOARD	
314	3-938-934-01	SPRING (F)		328	X-3374-412-1	HEAD ASSY, HOLDER	

8-8. MECHANISM DECK SECTION 2 (MF-D7-145)



369
M691
368
363
361
362
PM691
370
364
361
367
365
373
371
375
374
360
366
372
376
375
359
377
358
378
386
384
357
385
355
379
380
383
353
382
355
351
not supplied
354
352
381
356

Ref. No.	Part No.	Description	Remarks
351	3-938-949-01	WASHER (B)	
352	3-938-951-01	WASHER (D)	
353	3-938-936-01	SPRING (H)	
354	3-938-930-01	SPRING (B)	
355	3-938-910-01	REEL, CAP	
* 356	3-938-912-01	ARM (UD)	
357	3-938-952-01	WASHER (E)	
358	3-938-948-01	WASHER (A)	
359	3-938-932-01	SPRING (D)	
360	3-938-908-01	CASSETTE, SPRING	
361	3-938-945-01	SCREW (E)	
362	3-017-428-01	FRAME (D)	
363	3-938-920-01	PLUNGER, K	
* 364	3-938-918-01	TRIGGER, ARM	
365	3-938-931-01	SPRING (C)	
366	3-938-921-01	GEAR (REEL)	
* 367	1-662-742-11	SW BOARD	
368	3-938-954-01	WASHER (G)	
369	3-938-947-01	SCREW (G)	
370	3-017-431-01	BRACKET (MM)	
371	3-017-430-01	BELT	
373	3-017-434-01	SCREW (H)	
375	3-938-950-01	WASHER (C)	
376	3-017-433-01	SPRING (K)	
377	3-938-946-01	SCREW (F)	
* 378	3-938-919-01	ARM (FR)	
379	3-017-435-01	REFLECTOR	
380	3-017-429-01	GEAR (REF)	
381	3-938-917-01	GEAR (A)	
382	3-938-924-01	GEAR (P)	
383	3-938-923-01	GEAR (FR)	
384	X-3374-293-1	CLUTCH ASSY	
385	3-938-925-01	GEAR (IDL)	
386	3-938-922-01	GEAR (CAM)	
M691	X-3374-409-1	MOTOR ASSY	
PM691	1-454-806-11	SOLENOID, PLUNGER	

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
  CND : Canadian

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF

- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

Ref. No.	Part No.	Description	Remarks
*	1-667-146-11	AC INLET BOARD (US,CND)	
		***********************	
*	1-667-146-21	AC INLET BOARD (AEP,UK)	
		***********************	
		< CAPACITOR >	
C915	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C919	1-164-232-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
* CN410	1-580-163-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN905	1-564-519-11	PLUG, CONNECTOR 4P	
CN912	1-564-505-11	PLUG, CONNECTOR 2P (US,CND)	
		< JACK >	
⚠J901	1-526-838-11	INLET, AC 2P (AC IN) (AEP,UK)	
⚠J901	1-540-009-11	INLET, AC (AC IN) (US,CND)	
		< TRANSFORMER >	
T902	1-402-663-11	TRANSFORMER, LINE FILTER (LFT)	
**			
*	1-667-155-11	BATT BOARD (US,CND)	
		*******************	
*	1-667-155-21	BATT BOARD (AEP,UK)	
		*******************	
	3-017-531-01	TERMINAL (-) (BU), BATTERY	
		< CAPACITOR >	
C914	1-164-232-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
* CN904	1-580-163-11	PIN, CONNECTOR (PC BOARD) 2P	
**			
*	A-3321-268-A	CONTROL BOARD, COMPLETE (US,CND)	
		********************************	
*	A-3321-259-A	CONTROL BOARD, COMPLETE (AEP,UK)	
		********************************	
	1-475-317-11	LCD UNIT	
	1-783-031-11	WIRE, PARALLEL (FFC) (8 CORE)	
*	3-017-514-01	HOLDER, LCD	
*	3-020-934-01	HOLDER, LED	
*	3-378-138-01	CUSHION, SARANET	
	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	

Ref. No.	Part No.	Description	Remarks
		< CAPACITOR >	
C408	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C409	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C411	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C412	1-124-259-11	ELECT 4.7uF 20%	16V
C460	1-163-005-11	CERAMIC CHIP 470PF 10%	50V
C461	1-163-197-00	CERAMIC CHIP 470PF 10%	50V
C462	1-163-005-11	CERAMIC CHIP 470PF 10%	50V
C463	1-163-005-11	CERAMIC CHIP 470PF 10%	50V
C464	1-164-346-11	CERAMIC CHIP 1uF	16V
C465	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C466	1-104-665-11	ELECT 100uF 20%	10V
		< CONNECTOR >	
* CN401	1-580-158-11	PIN, CONNECTOR (PC BOARD) 6P	
CN402	1-691-079-31	HOUSING, CONNECTOR 20P	
* CN411	1-784-367-11	CONNECTOR (FFC/FPC) 8P	
		< DIODE >	
D411	8-719-059-40	DIODE SLR-342VR3F (OP/BATT)	
		< IC >	
IC401	8-742-088-10	HYB IC SBX1971-51	
IC403	8-759-487-00	IC S-81228SG-QO-T1	
		< JUMPER >	
JC401	1-216-295-91	SHORT 0	
JC402	1-216-296-91	SHORT 0	
JC403	1-216-295-91	SHORT 0	
JC405	1-216-295-91	SHORT 0	
		< RESISTOR >	
R411	1-216-039-00	METAL CHIP 390 5%	1/10W
R412	1-216-041-00	METAL CHIP 470 5%	1/10W
R413	1-216-039-00	METAL CHIP 390 5%	1/10W
R414	1-216-039-00	METAL CHIP 390 5%	1/10W
R415	1-216-045-00	METAL CHIP 680 5%	1/10W
R416	1-216-046-00	METAL CHIP 750 5%	1/10W
R417	1-216-041-00	METAL CHIP 470 5%	1/10W
R418	1-216-049-91	RES,CHIP 1K 5%	1/10W
R419	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R420	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R422	1-216-041-00	METAL CHIP 470 5%	1/10W
R423	1-216-039-00	METAL CHIP 390 5%	1/10W
R424	1-216-039-00	METAL CHIP 390 5%	1/10W
R425	1-216-041-00	METAL CHIP 470 5%	1/10W
R426	1-216-045-00	METAL CHIP 680 5%	1/10W

Ref. No.	Part No.	Description			Remarks
R427	1-216-046-00	METAL CHIP	750	5%	1/10W
R428	1-216-049-91	RES,CHIP	1K	5%	1/10W
R429	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R430	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R434	1-216-039-00	METAL CHIP	390	5%	1/10W
R435	1-216-041-00	METAL CHIP	470	5%	1/10W
R436	1-216-045-00	METAL CHIP	680	5%	1/10W
R437	1-216-046-00	METAL CHIP	750	5%	1/10W
R438	1-216-049-91	RES,CHIP	1K	5%	1/10W
R439	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R440	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R441	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R451	1-216-073-00	METAL CHIP	10K	5%	1/10W
R453	1-216-073-00	METAL CHIP	10K	5%	1/10W
R455	1-216-073-00	METAL CHIP	10K	5%	1/10W
R457	1-216-073-00	METAL CHIP	10K	5%	1/10W
R459	1-216-073-00	METAL CHIP	10K	5%	1/10W

< SWITCH >

Ref. No.	Part No.	Description
S401	1-771-214-11	SWITCH, ROTARY
S411	1-692-014-11	SWITCH, KEY BOARD (POWER)
S412	1-692-014-11	SWITCH, KEY BOARD (TC ■)
S413	1-692-014-11	SWITCH, KEY BOARD (TC ◀)
S414	1-692-014-11	SWITCH, KEY BOARD (TC ◀◀)
S415	1-692-014-11	SWITCH, KEY BOARD (TC ▶▶)
S416	1-692-014-11	SWITCH, KEY BOARD (●/❚❚)
S417	1-692-014-11	SWITCH, KEY BOARD (TC ▶)
S418	1-692-014-11	SWITCH, KEY BOARD (DUB START CD→TAPE)
S419	1-692-014-11	SWITCH, KEY BOARD (DISPLAY)
S420	1-692-014-11	SWITCH, KEY BOARD (DIR MODE)
S421	1-692-014-11	SWITCH, KEY BOARD (RADIO BAND)
S422	1-692-014-11	SWITCH, KEY BOARD (CD ▶)
S423	1-692-014-11	SWITCH, KEY BOARD (CD ■)
S424	1-692-014-11	SWITCH, KEY BOARD (OPEN/CLOSE)
S425	1-692-014-11	SWITCH, KEY BOARD (CD ❚❚)
S426	1-692-014-11	SWITCH, KEY BOARD (CD ▶▶)
S427	1-692-014-11	SWITCH, KEY BOARD (CD ◀◀)
S428	1-692-014-11	SWITCH, KEY BOARD (VOLUME –)
S429	1-692-014-11	SWITCH, KEY BOARD (VOLUME +)
S430	1-554-088-00	SWITCH, KEY BOARD (MEGABASS)
S434	1-554-088-00	SWITCH, KEY BOARD (STANDBY)
S435	1-554-088-00	SWITCH, KEY BOARD (CLOCK)
S436	1-554-088-00	SWITCH, KEY BOARD (TIMER/SLEEP)
S437	1-554-088-00	SWITCH, KEY BOARD (MENU)
S438	1-554-088-00	SWITCH, KEY BOARD (ENTER)
S439	1-692-014-11	SWITCH, KEY BOARD (COUNTER/RESET)
S440	1-554-088-00	SWITCH, KEY BOARD (SOUND)
S441	1-554-088-00	SWITCH, KEY BOARD (CANCEL)

****

* 1-667-149-11 DC OUT BOARD (US,CND)

****

* 1-667-149-21 DC OUT BOARD (AEP,UK)

****

< CAPACITOR >

Ref. No.	Part No.	Description		Remarks
C311	1-163-038-91	CERAMIC CHIP	0.1uF	25V

< CONNECTOR >

Ref. No.	Part No.	Description
CN412	1-564-505-11	PLUG, CONNECTOR 2P

< FERRITE BEAD >

Ref. No.	Part No.	Description	
FB412	1-500-425-11	FERRITE	0UH
FB413	1-500-425-11	FERRITE	0UH

< JACK >

Ref. No.	Part No.	Description
J304	1-764-746-11	JACK, DC OUT (DC OUT) (6V 800mA MAX)

****

* 1-667-147-11 DIODE BOARD (US,CND)

****

* 1-667-147-21 DIODE BOARD (AEP,UK)

****

1-533-217-31 HOLDER, FUSE

< CAPACITOR >

Ref. No.	Part No.	Description			Remarks
C901	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C901	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C902	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C902	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C903	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C903	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C904	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C904	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C905	1-128-547-11	ELECT	6800uF	20%	16V
C906	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C906	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C907	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C907	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C908	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C908	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C909	1-163-033-91	CERAMIC CHIP	0.022uF		50V (US,CND)
C909	1-165-319-11	CERAMIC CHIP	0.1uF		50V (AEP,UK)
C916	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C917	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C918	1-164-232-11	CERAMIC CHIP	0.01uF		50V

< CONNECTOR >

Ref. No.	Part No.	Description
* CN901	1-564-507-11	PLUG, CONNECTOR 4P
* CN902	1-580-154-11	PIN, CONNECTOR (PC BOARD) 2P
* CN903	1-564-508-11	PLUG, CONNECTOR 5P
CN906	1-564-505-11	PLUG, CONNECTOR 2P

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D901	8-719-302-38	DIODE RBV-602-01	
D902	8-719-984-67	DIODE 1SR139-100-T-64	
D903	8-719-984-67	DIODE 1SR139-100-T-64	
D904	8-719-984-67	DIODE 1SR139-100-T-64	
D905	8-719-984-67	DIODE 1SR139-100-T-64	
		< FUSE >	
⚠F901	1-532-505-31	FUSE, 5A 250V (AEP,UK)	
⚠F901	1-533-310-11	FUSE, GLASS TUBE6.3A 125V (US,CND)	
⚠F902	1-532-503-31	FUSE, 1.6A 250V (AEP,UK)	
⚠F902	1-533-296-11	FUSE, GLASS CYLINDRICAL(DIA.5) 2.0A 125V (US,CND)	
		< RESISTOR >	
R901	1-164-232-11	CERAMIC CHIP 0.01uF	50V

****

Ref. No.	Part No.	Description	Remarks
*	1-667-152-11	EXT ANT BOARD (US,CND) ********************	
*	1-667-152-21	EXT ANT BOARD (AEP,UK) ********************	
	3-017-528-01	TERMINAL, ANTENNA (US,CND)	
*	3-378-138-01	CUSHION, SARANET	
		< CONNECTOR >	
* CN413	1-580-154-11	PIN, CONNECTOR (PC BOARD) 2P	
		< DIODE >	
D408	8-719-988-62	DIODE 1SS355	
D409	8-719-988-62	DIODE 1SS355	
D413	8-719-988-62	DIODE 1SS355	
D414	8-719-988-62	DIODE 1SS355	

****

Ref. No.	Part No.	Description	Remarks
*	1-667-151-11	H/P BOARD (US,CND) ******************	
*	1-667-151-21	H/P BOARD (AEP,UK) ******************	
		< CAPACITOR >	
C190	1-126-934-11	ELECT 220uF 20%	10V
C290	1-126-934-11	ELECT 220uF 20%	10V
		< CONNECTOR >	
* CN409	1-580-165-11	PIN, CONNECTOR (PC BOARD) 4P	
		< FERRITE BEAD >	
FB401	1-500-445-21	FERRITE 0UH	
FB402	1-500-445-21	FERRITE 0UH	
FB403	1-500-445-21	FERRITE 0UH	
FB404	1-500-445-21	FERRITE 0UH	
		< JACK >	
J303	1-566-891-21	JACK (PHONES)	
		< RESISTOR >	
R199	1-216-295-91	SHORT 0	
R299	1-216-295-91	SHORT 0	

****

Ref. No.	Part No.	Description	Remarks
*	1-662-743-11	HEAD BOARD **********	
		< CONNECTOR >	
CN619	1-564-520-11	PLUG, CONNECTOR 5P	

****

Ref. No.	Part No.	Description	Remarks
*	1-667-148-11	JACK BOARD (US,CND) ******************	
*	1-667-148-21	JACK BOARD (AEP,UK) ******************	
*	3-378-434-01	CUSHION, SARANET	
		< CAPACITOR >	
C402	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C421	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C422	1-126-963-11	ELECT 4.7uF 20%	50V
		< CONNECTOR >	
* CN405	1-580-159-11	PIN, CONNECTOR (PC BOARD) 7P	
* CN406	1-580-159-11	PIN, CONNECTOR (PC BOARD) 7P	
CN407	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P	
* CN408	1-580-155-11	PIN, CONNECTOR (PC BOARD) 3P	
		< DIODE >	
D401	8-719-988-62	DIODE 1SS355	
D402	8-719-988-62	DIODE 1SS355	
D415	8-719-988-62	DIODE 1SS355	
D416	8-719-988-62	DIODE 1SS355	
		< FERRITE BEAD >	
FB405	1-216-295-91	SHORT 0	
FB406	1-216-295-91	SHORT 0	
FB407	1-500-445-21	FERRITE 0UH	
FB408	1-500-445-21	FERRITE 0UH	
FB409	1-500-445-21	FERRITE 0UH	
FB410	1-216-295-91	SHORT 0	
FB411	1-216-295-91	SHORT 0	
		< IC >	
IC402	8-749-921-12	IC GP1F32T	
		< JACK >	
J301	1-566-891-21	JACK (LINE IN)	
J302	1-566-891-21	JACK (LINE OUT)	
		< JUMPER >	
JC405	1-216-296-91	SHORT 0	
		< RESISTOR >	
R401	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R402	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R432	1-216-041-00	METAL CHIP 470 5%	1/10W
R433	1-216-039-00	METAL CHIP 390 5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés pa une marque ⚠ sont critique pour la sécurité. Ne les remplacer que par un pièce portant le numéro spécifié

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S431	1-554-088-00	SWITCH, KEY BOARD (MD(LINE))	
S432	1-554-088-00	SWITCH, KEY BOARD (CONTROL MD→CD)	
S433	1-554-088-00	SWITCH, KEY BOARD (DUB START CD→MD)	
**			
*	1-667-145-11	LAMP BOARD (US,CND) ******************	
*	1-667-145-21	LAMP BOARD (AEP,UK) ******************	
		< DIODE >	
D405	8-719-067-05	DIODE SLR-342MGTC7	
D406	8-719-067-05	DIODE SLR-342MGTC7	
D407	8-719-067-05	DIODE SLR-342MGTC7	
		< LAMP >	
PL401	1-517-700-11	LAMP, PILOT	
PL402	1-517-700-11	LAMP, PILOT	
PL403	1-517-700-11	LAMP, PILOT	
		< RESISTOR >	
R405	1-216-037-00	METAL CHIP 330 5% 1/10W	
**			
*	1-667-045-11	LOADING BOARD ************	
		< CAPACITOR >	
C790	1-104-664-11	ELECT 47uF 20% 25V	
		< CONNECTOR >	
* CN790	1-580-166-11	PIN, CONNECTOR (PC BOARD) 5P	
		< DIODE >	
D790	8-719-970-02	DIODE 1SR139-400	
		< IC >	
IC790	8-759-501-73	IC BA6418N	
		< COIL >	
L790	1-412-852-11	INDUCTOR 47uH	
		< RESISTOR >	
R790	1-249-425-11	CARBON 4.7K 5% 1/4W	F
		< SWITCH >	
S790	1-762-951-11	SWITCH, PUSH (CLOSE)	
S791	1-762-951-11	SWITCH, PUSH (OPEN)	
**			
*	A-3293-896-A	MAIN BOARD, COMPLETE (US,CND) *****************************	
*	A-3293-898-A	MAIN BOARD, COMPLETE (AEP,UK) *****************************	
*	3-020-250-01	PLATE (A), SHIELD	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C101	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C102	1-126-963-11	ELECT	4.7uF	20%	50V
C103	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C104	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C105	1-124-433-00	ELECT	100uF	20%	4V
C106	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C107	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C108	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C109	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C110	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C111	1-124-261-00	ELECT	10uF	20%	50V
C112	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C113	1-115-156-11	CERAMIC CHIP	1uF		10V
C151	1-126-963-11	ELECT	4.7uF	20%	50V
C152	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C153	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C154	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C156	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C157	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C158	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C159	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C160	1-137-302-11	FILM CHIP	0.047uF	5%	16V
C161	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C162	1-163-055-00	CERAMIC CHIP	0.0047uF	10%	50V
C163	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C164	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C165	1-126-960-11	ELECT	1uF	20%	50V
C167	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C168	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C170	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C171	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C172	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C173	1-135-227-11	TANTAL. CHIP	100uF	20%	6.3V
C174	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C175	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C176	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C177	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C178	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C179	1-126-963-11	ELECT	4.7uF	20%	50V
C181	1-115-156-11	CERAMIC CHIP	1uF		10V
C182	1-115-156-11	CERAMIC CHIP	1uF		10V
C183	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C184	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C201	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C202	1-126-963-11	ELECT	4.7uF	20%	50V
C203	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C204	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C205	1-124-433-00	ELECT	100uF	20%	4V
C206	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C207	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C208	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C209	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C210	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C211	1-124-261-00	ELECT	10uF	20%	50V
C212	1-109-982-11	CERAMIC CHIP	1uF	10%	10V

MAIN

Ref. No.	Part No.	Description			Remarks
C213	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C251	1-126-963-11	ELECT	4.7uF	20%	50V
C252	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C253	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C254	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C256	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C257	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C258	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C259	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C260	1-137-302-11	FILM CHIP	0.047uF	5%	16V
C261	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C262	1-163-055-00	CERAMIC CHIP	0.0047uF	10%	50V
C263	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C264	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C265	1-126-193-11	ELECT	1uF	20%	50V
C267	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C268	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C270	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C271	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C272	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C273	1-104-665-11	ELECT	100uF	20%	10V
C274	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C275	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C276	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C277	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C278	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C279	1-126-963-11	ELECT	4.7uF	20%	50V
C281	1-115-156-11	CERAMIC CHIP	1uF		10V
C282	1-115-156-11	CERAMIC CHIP	1uF		10V
C283	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C284	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C301	1-126-934-11	ELECT	220uF	20%	10V
C302	1-124-229-00	ELECT	33uF	20%	10V
C303	1-126-964-11	ELECT	10uF	20%	50V
C304	1-126-959-11	ELECT	0.47uF	20%	50V
C305	1-126-959-11	ELECT	0.47uF	20%	50V
C307	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C308	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C309	1-126-960-11	ELECT	1uF	20%	50V
C312	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C313	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C314	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C315	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C316	1-130-485-00	MYLAR	0.015uF	5%	50V
C317	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C318	1-124-584-00	ELECT	100uF	20%	10V
C319	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C320	1-163-057-00	CERAMIC CHIP	0.0068uF	10%	50V
C322	1-124-261-00	ELECT	10uF	20%	50V
C325	1-124-584-00	ELECT	100uF	20%	10V
C351	1-124-779-00	ELECT CHIP	10uF	20%	16V
C352	1-104-665-11	ELECT	100uF	20%	10V (AEP,UK)
C353	1-126-934-11	ELECT	220uF	20%	10V
C354	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C355	1-126-964-11	ELECT	10uF	20%	50V
C356	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C357	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C358	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C359	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C360	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remarks
C361	1-104-665-11	ELECT	100uF	20%	10V
C362	1-104-665-11	ELECT	100uF	20%	10V
C363	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C364	1-128-551-11	ELECT	22uF	20%	25V
C365	1-126-963-11	ELECT	4.7uF	20%	50V
C366	1-126-934-11	ELECT	220uF	20%	10V
C367	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C368	1-104-665-11	ELECT	100uF	20%	10V
C369	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C370	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C371	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C372	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C373	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C377	1-126-934-11	ELECT	220uF	20%	10V
C378	1-115-156-11	CERAMIC CHIP	1uF		10V
C601	1-126-395-11	ELECT	22uF	20%	16V
C603	1-124-779-00	ELECT CHIP	10uF	20%	16V
C606	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C607	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C701	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C702	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C703	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C704	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C705	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C706	1-104-665-11	ELECT	100uF	20%	10V
C707	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C708	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C709	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C710	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C711	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C712	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C713	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C714	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C715	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C716	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C717	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C719	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C720	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C721	1-126-967-11	ELECT	47uF	20%	10V
C722	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C723	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C724	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C725	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C726	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C727	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C728	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C729	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C730	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C731	1-104-665-11	ELECT	100uF	20%	10V
C732	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C733	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C734	1-163-063-91	CERAMIC CHIP	0.022uF	10%	50V
C735	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C736	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C737	1-104-665-11	ELECT	100uF	20%	10V
C741	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C742	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C743	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C744	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C745	1-163-063-91	CERAMIC CHIP	0.022uF	10%	50V

Ref. No.	Part No.	Description			Remarks
C746	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C747	1-126-925-11	ELECT	470uF	20%	10V
C748	1-104-665-11	ELECT	100uF	20%	10V
C749	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C750	1-126-934-11	ELECT	220uF	20%	10V
C751	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C752	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C753	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C754	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C755	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C756	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C757	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C758	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C759	1-104-665-11	ELECT	100uF	20%	10V
C760	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C762	1-126-967-11	ELECT	47uF	20%	10V
C763	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C764	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C765	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C766	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C767	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C768	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C770	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C771	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C772	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C773	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C775	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C780	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C782	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C785	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V
C786	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C787	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C788	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C789	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C790	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C801	1-164-346-11	CERAMIC CHIP	1uF		16V
C802	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C803	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C804	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C805	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C806	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C807	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C808	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C809	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C810	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C812	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C813	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C814	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C815	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C816	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C820	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C821	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C822	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C823	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C824	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C825	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C826	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C827	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C828	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remarks
C829	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C830	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C831	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C832	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C834	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C836	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C837	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C838	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C839	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C841	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C843	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C844	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C845	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C846	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C847	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C848	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C849	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C850	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C851	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C852	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C853	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C855	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C856	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C857	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C858	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C859	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C860	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C861	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C862	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C863	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C864	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C865	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C866	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C867	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C868	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C869	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C871	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C872	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C873	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C874	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C875	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C876	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C877	1-104-665-11	ELECT	100uF	20%	10V
C878	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C880	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C881	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C882	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C883	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C884	1-126-960-11	ELECT	1uF	20%	50V
C885	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C887	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C888	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C889	1-126-967-11	ELECT	47uF	20%	10V
C890	1-104-665-11	ELECT	100uF	20%	25V
C891	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C892	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C893	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C894	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C895	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C896	1-163-133-00	CERAMIC CHIP	470PF	5%	50V

MAIN

Ref. No.	Part No.	Description	Remarks
C897	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C898	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C899	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C900	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C901	1-163-059-91	CERAMIC CHIP 0.01uF 10%	50V
C902	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C904	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C908	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C909	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C910	1-163-059-91	CERAMIC CHIP 0.01uF 10%	50V
C911	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C913	1-124-779-00	ELECT CHIP 10uF 20%	16V
C914	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C915	1-163-205-00	CERAMIC CHIP 0.001uF 5%	50V
C916	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C917	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C918	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C920	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C951	1-104-665-11	ELECT 100uF 20%	10V
C952	1-104-665-11	ELECT 100uF 20%	10V
C953	1-126-940-11	ELECT 330uF 20%	10V
C958	1-117-943-11	ELECT 6800uF 20%	25V
C960	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C961	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C962	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C963	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C964	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V)
		< CONNECTOR >	
* CN302	1-580-158-11	PIN, CONNECTOR (PC BOARD) 6P	
* CN351	1-564-520-11	PLUG, CONNECTOR 5P	
CN352	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P	
CN353	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P	
* CN601	1-580-161-11	PIN, CONNECTOR (PC BOARD) 9P	
CN701	1-695-382-31	PIN, CONNECTOR (PC BOARD) 21P	
CN701	1-770-528-31	CONNECTOR, FFC/FPC 21P	
* CN703	1-580-155-11	PIN, CONNECTOR (PC BOARD) 3P	
CN704	1-564-505-11	PLUG, CONNECTOR 2P	
* CN802	1-695-381-31	PIN, CONNECTOR (PC BOARD) 20P	
CN802	1-784-220-11	SOCKET, CONNECTOR (L TYPE) 20P	
CN803	1-770-520-31	SOCKET, CONNECTOR (L TYRE) 12P	
* CN804	1-580-159-11	PIN, CONNECTOR (PC BOARD) 7P	
* CN806	1-580-166-11	PIN, CONNECTOR (PC BOARD) 5P	
* CN951	1-564-509-11	PLUG, CONNECTOR 6P	
		< DIODE >	
D301	8-719-988-62	DIODE 1SS355	
D302	8-719-988-62	DIODE 1SS355	
D303	8-719-988-62	DIODE 1SS355	
D304	8-719-988-62	DIODE 1SS355	
D305	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D352	8-719-914-43	DIODE DAN202K	
D602	8-719-988-62	DIODE 1SS355	
D603	8-719-988-62	DIODE 1SS355	
D801	8-719-058-24	DIODE RB501V-40TE-17	
D802	8-719-058-24	DIODE RB501V-40TE-17	
D803	8-719-058-24	DIODE RB501V-40TE-17	
D804	8-719-058-24	DIODE RB501V-40TE-17	
D805	8-719-988-62	DIODE 1SS355	
D806	8-719-988-62	DIODE 1SS355	
D807	8-719-914-44	DIODE DAP202K	
D808	8-719-988-62	DIODE 1SS355	
D809	8-719-988-62	DIODE 1SS355	
D811	8-719-914-44	DIODE DAP202K	
D813	8-719-914-43	DIODE DAN202K	
D814	8-719-058-24	DIODE RB501V-40TE-17	
D815	8-719-988-62	DIODE 1SS355	
D816	8-719-020-74	DIODE MA718	
D818	8-719-058-24	DIODE RB501V-40TE-17	
D819	8-719-977-40	DIODE	
D820	8-719-988-62	DIODE 1SS355	
D822	8-719-988-62	DIODE 1SS355	
D823	8-719-988-62	DIODE 1SS355	
		< FERRITE BEAD >	
FB701	1-500-445-21	FERRITE 0UH	
FB702	1-500-445-21	FERRITE 0UH	
FB703	1-500-445-21	FERRITE 0UH	
FB704	1-500-445-21	FERRITE 0UH	
FB705	1-500-445-21	FERRITE 0UH	
FB706	1-500-445-21	FERRITE 0UH	
FB707	1-500-445-21	FERRITE 0UH	
FB708	1-500-445-21	FERRITE 0UH	
FB709	1-216-295-91	SHORT 0	
FB710	1-216-295-91	SHORT 0	
		< IC >	
IC301	8-759-449-29	IC M51167BFP-70DC	
IC351	8-759-636-55	IC M5218AFP	
IC352	8-759-494-40	IC M62428AFP600C	
IC353	8-759-333-16	IC LA4705NA	
IC354	8-759-701-02	IC NJM2073M	
IC355	8-759-100-96	IC UPC4558G2	
IC357	8-759-462-75	IC BA07ST	
IC359	8-759-938-15	IC BA178M05	
IC701	8-752-082-14	IC CXA1992BR	
IC702	8-759-473-42	IC BA6898FP	
IC703	8-752-380-64	IC CXD2529Q	
IC801	8-752-893-96	IC CXP84332-086Q	
IC803	8-749-014-83	IC PHOTO COUPLER NJL5151MA-S-TI	
IC803	8-719-710-04	IC PHOTO COUPLER NJL5151MB	
IC805	8-759-486-99	IC S-81250SGUP-DQD-T1	
IC806	8-759-256-03	IC S-80735AN-DZ-T1	
IC807	8-759-503-60	IC S-80740AN-D4-S	
IC952	8-759-496-15	IC BA05ST-V5	
IC953	8-759-462-77	IC BA09ST	
		< JUMPER >	
JC801	1-216-296-91	SHORT 0	
JC804	1-216-296-91	SHORT 0	
JC807	1-216-296-91	SHORT 0	
JC809	1-216-295-91	SHORT 0	
JC810	1-216-296-91	SHORT 0	

Ref. No.	Part No.	Description	Remarks
JC818	1-216-295-91	SHORT 0	
JC819	1-216-296-91	SHORT 0	
JC820	1-216-295-91	SHORT 0	
JC821	1-216-296-91	SHORT 0	
JC822	1-216-296-91	SHORT 0	
JC823	1-216-296-91	SHORT 0	
JC824	1-216-296-91	SHORT 0	
JC825	1-216-296-91	SHORT 0	
JC826	1-216-296-91	SHORT 0	
JC827	1-216-296-91	SHORT 0	
JC828	1-216-295-91	SHORT 0	
JC829	1-216-295-91	SHORT 0	
JC830	1-216-296-91	SHORT 0	
JC831	1-216-296-91	SHORT 0	
JC833	1-216-296-91	SHORT 0	
JC834	1-216-295-91	SHORT 0	
JC835	1-216-295-91	SHORT 0	
JC836	1-216-296-91	SHORT 0	
JC837	1-216-296-91	SHORT 0	
JC839	1-216-296-91	SHORT 0	
JC840	1-216-296-91	SHORT 0	
JC843	1-216-295-91	SHORT 0	
JC844	1-216-295-91	SHORT 0	
JC845	1-216-295-91	SHORT 0	
JC846	1-216-296-91	SHORT 0	
JC848	1-216-296-91	SHORT 0	
JC850	1-216-296-91	SHORT 0	
JC851	1-216-296-91	SHORT 0	
JC852	1-216-295-91	SHORT 0	
JC854	1-216-296-91	SHORT 0	
JC855	1-216-296-91	SHORT 0	
JC856	1-216-296-91	SHORT 0	
JC858	1-216-296-91	SHORT 0	
JC859	1-216-296-91	SHORT 0	
JC860	1-216-296-91	SHORT 0	
JC861	1-216-295-91	SHORT 0	
JC862	1-216-296-91	SHORT 0	
JC863	1-216-296-91	SHORT 0	
JC864	1-216-296-91	SHORT 0	
JC865	1-216-296-91	SHORT 0	
JC866	1-216-025-91	RES,CHIP 100 5%	1/10W
JC867	1-216-296-91	SHORT 0	
JC868	1-216-295-91	SHORT 0	
JC869	1-216-296-91	SHORT 0	
JC870	1-216-296-91	SHORT 0	
JC872	1-216-296-91	SHORT 0	
JC873	1-216-296-91	SHORT 0	
JC874	1-216-296-91	SHORT 0	
JC875	1-216-296-91	SHORT 0	
		< JUMPER RESISTOR >	
JW701	1-410-397-21	FERRITE BEAD INDUCTOR	
JW702	1-410-397-21	FERRITE BEAD INDUCTOR	
		< COIL >	
L701	1-500-445-21	FERRITE 0uH	

Ref. No.	Part No.	Description	Remarks
		< IC LINK >	
PS301	1-216-296-91	SHORT 0	
⚠PS601	1-576-123-21	LINK, IC	
		< TRANSISTOR >	
Q101	8-729-920-31	TRANSISTOR DTC343TK	
Q102	8-729-920-31	TRANSISTOR DTC343TK	
Q103	8-729-012-83	TRANSISTOR 2SK679A	
Q104	8-729-027-24	TRANSISTOR DTA114TKA-T146	
Q151	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q152	8-729-920-31	TRANSISTOR DTC343TK	
Q153	8-729-028-99	TRANSISTOR DTC114YUA-T106	
Q154	8-729-920-31	TRANSISTOR DTC343TK	
Q155	8-729-920-31	TRANSISTOR DTC343TK	
Q201	8-729-920-31	TRANSISTOR DTC343TK	
Q202	8-729-920-31	TRANSISTOR DTC343TK	
Q203	8-729-012-83	TRANSISTOR 2SK679A	
Q204	8-729-027-24	TRANSISTOR DTA114TKA-T146	
Q251	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q252	8-729-920-31	TRANSISTOR DTC343TK	
Q253	8-729-028-99	TRANSISTOR DTC114YUA-T106	
Q254	8-729-920-31	TRANSISTOR DTC343TK	
Q255	8-729-920-31	TRANSISTOR DTC343TK	
Q301	8-729-027-26	TRANSISTOR DTA114YKA-T146	
Q302	8-729-105-37	TRANSISTOR 2SC3360	
Q303	8-729-105-37	TRANSISTOR 2SC3360	
Q304	8-729-800-34	TRANSISTOR 2SC3070	
Q305	8-729-101-07	TRANSISTOR 2SB798-DL	
Q306	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q307	8-729-920-41	TRANSISTOR FMC3	
Q308	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q309	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q310	8-729-901-47	TRANSISTOR DTA143EK	
Q311	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q312	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q313	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q314	8-729-021-82	TRANSISTOR 2SD2396K	
Q351	8-729-027-26	TRANSISTOR DTA114YKA-T146	
Q352	8-729-920-41	TRANSISTOR FMC3	
Q353	8-729-920-41	TRANSISTOR FMC3	
Q354	8-729-920-41	TRANSISTOR FMC3	
Q365	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q601	8-729-014-23	TRANSISTOR RN2305-TE85R	
Q602	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q603	8-729-027-58	TRANSISTOR DTC143ZKA-T146	
Q604	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q605	8-729-101-07	TRANSISTOR 2SB798-DL	
Q606	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q701	8-729-101-07	TRANSISTOR 2SB798-DL	
Q702	8-729-029-17	TRANSISTOR DTC144WUT106	
Q801	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q802	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q803	8-729-920-41	TRANSISTOR FMC3	
Q804	8-729-027-46	TRANSISTOR DTC114YKA-T146	
Q805	8-729-920-41	TRANSISTOR FMC3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN

Ref. No.	Part No.	Description			Remarks
Q806	8-729-920-28	TRANSISTOR	FMG9		
Q807	8-729-920-28	TRANSISTOR	FMG9		
Q809	8-729-920-28	TRANSISTOR	FMG9		
Q810	8-729-904-87	TRANSISTOR	2SB1197K-R		
Q811	8-729-015-34	TRANSISTOR	FMA5-T-148		
Q812	8-729-027-26	TRANSISTOR	DTA114YKA-T146		
Q813	8-729-931-02	TRANSISTOR	2SC2413KQ		
Q814	8-729-931-02	TRANSISTOR	2SC2413KQ		
Q815	8-729-931-41	TRANSISTOR	FMC5		
Q816	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q817	8-729-041-79	TRANSISTOR	2SB1443TV2-Q		
Q818	1-801-806-11	TRANSISTOR	DTC144EKA-T146		
Q819	8-729-920-85	TRANSISTOR	2SD1664-QR		
Q820	8-729-027-26	TRANSISTOR	DTA114YKA-T146		
Q821	8-729-106-60	TRANSISTOR	2SB1115A		
Q822	8-729-027-46	TRANSISTOR	DTC114YKA-T146		
Q823	8-729-920-41	TRANSISTOR	FMC3		
Q824	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q825	8-729-920-41	TRANSISTOR	FMC3		
Q826	8-729-106-60	TRANSISTOR	2SB1115A		
Q827	8-729-106-60	TRANSISTOR	2SB1115A		
Q828	8-729-106-60	TRANSISTOR	2SB1115A		
Q829	8-729-106-60	TRANSISTOR	2SB1115A		
Q830	8-729-027-46	TRANSISTOR	DTC114YKA-T146		
Q831	8-729-106-60	TRANSISTOR	2SB1115A		
Q832	8-729-106-60	TRANSISTOR	2SB1115A		
Q833	8-729-044-47	TRANSISTOR	MMSTA13-T146		
Q834	8-729-027-55	TRANSISTOR	DTC143EKA-T146		
Q835	8-729-027-45	TRANSISTOR	DTC114WKA-T146		
Q836	8-729-027-46	TRANSISTOR	DTC114YKA-T146		
Q837	8-729-902-93	TRANSISTOR	FMG4		
Q838	8-729-920-41	TRANSISTOR	FMC3		
		< RESISTOR >			
R101	1-216-075-00	METAL CHIP	12K	5%	1/10W
R102	1-216-804-11	METAL CHIP	39	5%	1/16W
R103	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R104	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R105	1-216-836-11	METAL CHIP	18K	5%	1/16W
R106	1-216-821-11	METAL CHIP	1K	5%	1/16W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R110	1-216-833-11	METAL CHIP	10K	5%	1/16W
R111	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R112	1-216-837-11	METAL CHIP	22K	5%	1/16W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-843-11	METAL CHIP	68K	5%	1/16W
R115	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R151	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R152	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R153	1-216-097-91	RES,CHIP	100K	5%	1/10W
R154	1-216-174-00	RES,CHIP	100	5%	1/8W
R155	1-216-848-11	METAL CHIP	180K	5%	1/16W
R156	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R157	1-216-049-91	RES,CHIP	1K	5%	1/10W
R158	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R159	1-216-049-91	RES,CHIP	1K	5%	1/10W
R160	1-216-069-00	METAL CHIP	6.8K	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R161	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R162	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R163	1-216-811-11	METAL CHIP	150	5%	1/16W
R164	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R165	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R166	1-216-836-11	METAL CHIP	18K	5%	1/16W
R167	1-216-833-11	METAL CHIP	10K	5%	1/16W
R168	1-216-841-11	METAL CHIP	47K	5%	1/16W
R169	1-216-864-11	METAL CHIP	0	5%	1/16W
R170	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R171	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R172	1-216-845-11	METAL CHIP	100K	5%	1/16W
R173	1-216-049-91	RES,CHIP	1K	5%	1/10W
R175	1-216-833-11	METAL CHIP	10K	5%	1/16W
R176	1-216-857-11	METAL CHIP	1M	5%	1/16W
R178	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R199	1-216-837-11	METAL CHIP	22K	5%	1/16W
R201	1-216-075-00	METAL CHIP	12K	5%	1/10W
R202	1-216-804-11	METAL CHIP	39	5%	1/16W
R203	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R204	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R205	1-216-836-11	METAL CHIP	18K	5%	1/16W
R206	1-216-821-11	METAL CHIP	1K	5%	1/16W
R207	1-216-073-00	METAL CHIP	10K	5%	1/10W
R208	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R209	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R210	1-216-833-11	METAL CHIP	10K	5%	1/16W
R211	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R212	1-216-837-11	METAL CHIP	22K	5%	1/16W
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W
R214	1-216-843-11	METAL CHIP	68K	5%	1/16W
R215	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R251	1-216-202-00	RES,CHIP	1.5K	5%	1/8W
R252	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R253	1-216-097-91	RES,CHIP	100K	5%	1/10W
R254	1-216-025-91	RES,CHIP	100	5%	1/10W
R255	1-216-848-11	METAL CHIP	180K	5%	1/16W
R256	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R257	1-216-049-91	RES,CHIP	1K	5%	1/10W
R258	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R259	1-216-049-91	RES,CHIP	1K	5%	1/10W
R260	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R261	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R262	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R263	1-216-811-11	METAL CHIP	150	5%	1/16W
R264	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R265	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R266	1-216-836-11	METAL CHIP	18K	5%	1/16W
R267	1-216-833-11	METAL CHIP	10K	5%	1/16W
R268	1-216-841-11	METAL CHIP	47K	5%	1/16W
R269	1-216-864-11	METAL CHIP	0	5%	1/16W
R270	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R271	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R272	1-216-845-11	METAL CHIP	100K	5%	1/16W
R273	1-216-049-91	RES,CHIP	1K	5%	1/10W
R275	1-216-073-00	METAL CHIP	10K	5%	1/10W
R276	1-216-857-11	METAL CHIP	1M	5%	1/16W
R278	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R299	1-216-837-11	METAL CHIP	22K	5%	1/16W
R301	1-216-803-11	METAL CHIP	33	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R302	1-216-121-91	RES,CHIP	1M	5%	1/10W
R303	1-216-113-00	METAL CHIP	470K	5%	1/10W
R304	1-216-041-00	METAL CHIP	470	5%	1/10W
R305	1-216-041-00	METAL CHIP	470	5%	1/10W
R306	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R307	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-845-11	METAL CHIP	100K	5%	1/16W
R310	1-216-049-91	RES,CHIP	1K	5%	1/10W
R311	1-216-049-91	RES,CHIP	1K	5%	1/10W
R312	1-216-105-91	RES,CHIP	220K	5%	1/10W
R313	1-216-150-91	RES,CHIP	10	5%	1/8W
R314	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R315	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R316	1-216-805-11	METAL CHIP	47	5%	1/16W
R317	1-216-849-11	METAL CHIP	220K	5%	1/16W
R318	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R319	1-216-837-11	METAL CHIP	22K	5%	1/16W
R320	1-216-841-11	METAL CHIP	47K	5%	1/16W
R321	1-216-073-00	METAL CHIP	10K	5%	1/10W
R322	1-216-845-11	METAL CHIP	100K	5%	1/16W
R323	1-216-833-11	METAL CHIP	10K	5%	1/16W
R328	1-216-049-91	RES,CHIP	1K	5%	1/10W
R351	1-216-073-00	METAL CHIP	10K	5%	1/10W
R352	1-216-073-00	METAL CHIP	10K	5%	1/10W
R353	1-216-073-00	METAL CHIP	10K	5%	1/10W
R354	1-216-073-00	METAL CHIP	10K	5%	1/10W
R356	1-216-049-91	RES,CHIP	1K	5%	1/10W
R357	1-216-037-00	METAL CHIP	330	5%	1/10W
R358	1-216-246-00	RES,CHIP	100K	5%	1/8W
R359	1-216-857-11	METAL CHIP	1M	5%	1/16W
R361	1-216-194-00	METAL CHIP	680	5%	1/8W
R362	1-216-180-00	RES,CHIP	180	5%	1/8W
R363	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R398	1-216-174-00	RES,CHIP	100	5%	1/8W
R601	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R602	1-216-839-11	METAL CHIP	33K	5%	1/16W
R603	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R604	1-216-994-11	RES,CHIP	13K	5%	1/16W
R605	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R606	1-216-817-11	METAL CHIP	470	5%	1/16W
R607	1-216-097-91	RES,CHIP	100K	5%	1/10W
R608	1-216-049-91	RES,CHIP	1K	5%	1/10W
R612	1-216-073-00	METAL CHIP	10K	5%	1/10W
R613	1-216-085-00	METAL CHIP	33K	5%	1/10W
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W
R617	1-216-845-11	METAL CHIP	100K	5%	1/16W
R619	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R623	1-216-049-91	RES,CHIP	1K	5%	1/10W
R701	1-216-105-91	RES,CHIP	220K	5%	1/10W
R702	1-216-864-11	METAL CHIP	0	5%	1/16W
R703	1-216-101-00	METAL CHIP	150K	5%	1/10W
R704	1-216-841-11	METAL CHIP	47K	5%	1/16W
R705	1-216-841-11	METAL CHIP	47K	5%	1/16W
R706	1-216-101-00	METAL CHIP	150K	5%	1/10W
R707	1-216-101-00	METAL CHIP	150K	5%	1/10W
R708	1-216-847-11	METAL CHIP	150K	5%	1/16W
R710	1-216-851-11	METAL CHIP	330K	5%	1/16W
R712	1-216-089-91	RES,CHIP	47K	5%	1/10W
R713	1-216-831-11	METAL CHIP	6.8K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R714	1-216-836-11	METAL CHIP	18K	5%	1/16W
R715	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R716	1-216-089-91	RES,CHIP	47K	5%	1/10W
R717	1-216-121-91	RES,CHIP	1M	5%	1/10W
R718	1-216-855-11	METAL CHIP	680K	5%	1/16W
R719	1-216-001-00	METAL CHIP	10	5%	1/10W
R720	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R721	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R722	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R723	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R724	1-216-847-11	METAL CHIP	150K	5%	1/16W
R725	1-216-851-11	METAL CHIP	330K	5%	1/16W
R726	1-216-114-00	RES,CHIP	510K	5%	1/10W
R727	1-216-101-00	METAL CHIP	150K	5%	1/10W
R728	1-216-847-11	METAL CHIP	150K	5%	1/16W
R729	1-216-834-11	METAL CHIP	12K	5%	1/16W
R730	1-216-849-11	METAL CHIP	220K	5%	1/16W
R731	1-216-101-00	METAL CHIP	150K	5%	1/10W
R732	1-216-089-91	RES,CHIP	47K	5%	1/10W
R733	1-216-845-11	METAL CHIP	100K	5%	1/16W
R734	1-216-234-00	RES,CHIP	33K	5%	1/8W
R735	1-216-833-11	METAL CHIP	10K	5%	1/16W
R736	1-216-833-11	METAL CHIP	10K	5%	1/16W
R737	1-216-839-11	METAL CHIP	33K	5%	1/16W
R738	1-216-837-11	METAL CHIP	22K	5%	1/16W
R739	1-216-230-00	RES,CHIP	22K	5%	1/8W
R740	1-216-864-11	METAL CHIP	0	5%	1/16W
R741	1-500-444-11	FERRITE	0UH		
R742	1-216-864-11	METAL CHIP	0	5%	1/16W
R743	1-216-864-11	METAL CHIP	0	5%	1/16W
R744	1-216-296-91	SHORT	0		
R745	1-216-821-11	METAL CHIP	1K	5%	1/16W
R746	1-216-821-11	METAL CHIP	1K	5%	1/16W
R747	1-216-821-11	METAL CHIP	1K	5%	1/16W
R748	1-216-864-11	METAL CHIP	0	5%	1/16W
R749	1-216-222-00	RES,CHIP	10K	5%	1/8W
R750	1-216-222-00	RES,CHIP	10K	5%	1/8W
R751	1-216-073-00	METAL CHIP	10K	5%	1/10W
R752	1-216-089-91	RES,CHIP	47K	5%	1/10W
R753	1-216-821-11	METAL CHIP	1K	5%	1/16W
R754	1-216-049-91	RES,CHIP	1K	5%	1/10W
R755	1-216-049-91	RES,CHIP	1K	5%	1/10W
R756	1-216-049-91	RES,CHIP	1K	5%	1/10W
R757	1-500-445-21	FERRITE	0UH		
R758	1-500-444-11	FERRITE	0UH		
R759	1-500-444-11	FERRITE	0UH		
R760	1-500-444-11	FERRITE	0UH		
R761	1-500-444-11	FERRITE	0UH		
R762	1-216-238-91	RES,CHIP	47K	5%	1/8W
R763	1-216-089-91	RES,CHIP	47K	5%	1/10W
R764	1-216-864-11	METAL CHIP	0	5%	1/16W
R765	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R766	1-216-049-91	RES,CHIP	1K	5%	1/10W
R767	1-216-073-00	METAL CHIP	10K	5%	1/10W
R768	1-216-121-91	RES,CHIP	1M	5%	1/10W
R769	1-216-864-11	METAL CHIP	0	5%	1/16W
R770	1-216-833-11	METAL CHIP	10K	5%	1/16W
R771	1-216-849-11	METAL CHIP	220K	5%	1/16W
R772	1-216-230-00	RES,CHIP	22K	5%	1/8W
R773	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remarks
R779	1-216-833-11	METAL CHIP	10K	5%	1/16W
R790	1-216-121-91	RES,CHIP	1M	5%	1/10W
R791	1-216-041-00	METAL CHIP	470	5%	1/10W
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R802	1-216-809-11	METAL CHIP	100	5%	1/16W
R803	1-216-821-11	METAL CHIP	1K	5%	1/16W
R804	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R805	1-216-073-00	METAL CHIP	10K	5%	1/10W
R806	1-216-295-91	SHORT	0		
R807	1-216-833-11	METAL CHIP	10K	5%	1/16W
R808	1-216-049-91	RES,CHIP	1K	5%	1/10W
R809	1-216-073-00	METAL CHIP	10K	5%	1/10W
R810	1-216-049-91	RES,CHIP	1K	5%	1/10W
R811	1-216-049-91	RES,CHIP	1K	5%	1/10W
R812	1-216-821-11	METAL CHIP	1K	5%	1/16W
R813	1-216-821-11	METAL CHIP	1K	5%	1/16W
R814	1-233-412-11	RES, CHIP NETWORK		1.0K (3216)	
R815	1-208-795-11	RES,CHIP	3.6K	0.50%	1/10W
R816	1-218-856-11	RES,CHIP	2.4K	0.50%	1/16W
R817	1-218-867-11	RES,CHIP	6.8K	0.50%	1/16W
R818	1-233-412-11	RES, CHIP NETWORK		1.0K (3216)	
R819	1-218-854-11	RES,CHIP	2K	0.50%	1/16W
R820	1-211-991-11	RES,CHIP	82	0.50%	1/16W
R821	1-218-856-11	RES,CHIP	2.4K	0.50%	1/16W
R822	1-216-049-91	RES,CHIP	1K	5%	1/10W
R823	1-216-821-11	METAL CHIP	1K	5%	1/16W
R824	1-233-577-11	RES, CHIP NETWORK		470	
R825	1-216-833-11	METAL CHIP	10K	5%	1/16W
R826	1-216-025-91	RES,CHIP	100	5%	1/10W
R827	1-233-412-11	RES, CHIP NETWORK		1.0K (3216)	
R828	1-216-821-11	METAL CHIP	1K	5%	1/16W
R829	1-216-833-11	METAL CHIP	10K	5%	1/16W (US,CND)
R831	1-216-817-11	METAL CHIP	470	5%	1/16W
R833	1-216-073-00	METAL CHIP	10K	5%	1/10W
R835	1-216-821-11	METAL CHIP	1K	5%	1/16W
R839	1-233-577-11	RES, CHIP NETWORK		470	
R843	1-233-412-11	RES, CHIP NETWORK		1.0K (3216)	
R844	1-216-049-91	RES,CHIP	1K	5%	1/10W
R847	1-216-049-91	RES,CHIP	1K	5%	1/10W
R849	1-233-412-11	RES, CHIP NETWORK		1.0K (3216)	
R850	1-216-821-11	METAL CHIP	1K	5%	1/16W
R852	1-216-089-91	RES,CHIP	47K	5%	1/10W
R855	1-233-412-11	RES, CHIP NETWORK		1.0K (3216)	
R858	1-216-841-11	METAL CHIP	47K	5%	1/16W
R860	1-233-576-11	RES, CHIP NETWORK		100	
R861	1-216-815-11	METAL CHIP	330	5%	1/16W
R862	1-216-089-91	RES,CHIP	47K	5%	1/10W
R864	1-233-577-11	RES, CHIP NETWORK		470	
R865	1-216-809-11	METAL CHIP	100	5%	1/16W
R866	1-216-817-11	METAL CHIP	470	5%	1/16W (US,CND)
R866	1-216-041-00	METAL CHIP	470	5%	1/10W (AEP,UK)
R867	1-216-833-11	METAL CHIP	10K	5%	1/16W
R868	1-216-821-11	METAL CHIP	1K	5%	1/16W
R869	1-216-041-00	METAL CHIP	470	5%	1/10W
R870	1-233-576-11	RES, CHIP NETWORK		100	
R871	1-216-821-11	METAL CHIP	1K	5%	1/16W
R872	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R873	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R874	1-233-577-11	RES, CHIP NETWORK		470	
R875	1-218-835-11	RES,CHIP	330	0.50%	1/16W
R876	1-218-851-11	RES,CHIP	1.5K	0.50%	1/16W
R877	1-218-831-11	RES,CHIP	220	0.50%	1/16W
R881	1-216-295-91	SHORT	0		
R885	1-233-576-11	RES, CHIP NETWORK		100	
R888	1-216-043-91	RES,CHIP	560	5%	1/10W
R890	1-216-821-11	METAL CHIP	1K	5%	1/16W
R891	1-216-238-91	RES,CHIP	47K	5%	1/8W
R892	1-216-049-91	RES,CHIP	1K	5%	1/10W
R893	1-216-089-91	RES,CHIP	47K	5%	1/10W
R894	1-233-414-11	RES, CHIP NETWORK		4.7K (3216)	
R894	1-239-430-11	NETWORK RESISTOR (CHIP)	4.7K		
R895	1-216-821-11	METAL CHIP	1K	5%	1/16W (US,CND)
R895	1-216-819-11	METAL CHIP	680	5%	1/16W (AEP,UK)
R896	1-216-821-11	METAL CHIP	1K	5%	1/16W
R897	1-216-821-11	METAL CHIP	1K	5%	1/16W
R901	1-216-821-11	METAL CHIP	1K	5%	1/16W
R902	1-216-115-00	METAL CHIP	560K	5%	1/10W
R903	1-216-833-11	METAL CHIP	10K	5%	1/16W
R904	1-216-073-00	METAL CHIP	10K	5%	1/10W
R905	1-216-105-91	RES,CHIP	220K	5%	1/10W
R906	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R907	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R908	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R909	1-216-113-00	METAL CHIP	470K	5%	1/10W
R910	1-216-113-00	METAL CHIP	470K	5%	1/10W
R911	1-216-113-00	METAL CHIP	470K	5%	1/10W
R913	1-216-821-11	METAL CHIP	1K	5%	1/16W
R914	1-216-833-11	METAL CHIP	10K	5%	1/16W
R915	1-216-025-91	RES,CHIP	100	5%	1/10W
R916	1-216-097-91	RES,CHIP	100K	5%	1/10W
R917	1-216-817-11	METAL CHIP	470	5%	1/16W
R918	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R919	1-216-073-00	METAL CHIP	10K	5%	1/10W
R920	1-216-073-00	METAL CHIP	10K	5%	1/10W
R922	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (US,CND)
R922	1-216-295-91	SHORT	0 (AEP,UK)		
R923	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R924	1-216-041-00	METAL CHIP	470	5%	1/10W
R925	1-216-040-00	RES,CHIP	430	5%	1/10W (US,CND)
R925	1-216-041-00	METAL CHIP	470	5%	1/10W (AEP,UK)
R926	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
R927	1-216-222-00	RES,CHIP	10K	5%	1/8W
R928	1-216-049-91	RES,CHIP	1K	5%	1/10W
R929	1-216-833-11	METAL CHIP	10K	5%	1/16W
		< TRANSFORMER >			
T301	1-429-820-11	TRANSFORMER, BIAS OSCILLATION			

Ref. No.	Part No.	Description	Remarks
		< VIBRATOR >	
X701	1-767-226-11	VIBRATOR, CRYSTAL	
X801	1-579-901-11	OSCILLATOR, CERAMIC	
X802	1-767-697-11	VIBRATOR, CRYSTAL (32.768MHz)	

****

Ref. No.	Part No.	Description	Remarks
*	1-670-309-11	MD JACK BOARD (US,CND) *********************	
*	1-670-309-21	MD JACK BOARD (AEP,UK) *********************	
		< CAPACITOR >	
C414	1-124-434-00	ELECT 220uF 20%	4V
C415	1-164-346-11	CERAMIC CHIP 1uF	16V
C416	1-164-346-11	CERAMIC CHIP 1uF	16V
		< CONNECTOR >	
* CN404	1-580-159-11	PIN, CONNECTOR (PC BOARD) 7P	
		< DIODE >	
D403	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D404	8-719-056-83	DIODE UDZ-TE-17-6.8B	
		< FERRITE BEAD >	
FB414	1-500-445-21	FERRITE 0UH	
FB415	1-216-295-91	SHORT 0 (US,CND)	
FB415	1-500-445-21	FERRITE 0UH (AEP,UK)	
FB416	1-208-782-11	RES,CHIP 1K 0.50%	1/10W
FB417	1-500-445-21	FERRITE 0UH	
FB418	1-216-295-91	SHORT 0 (US,CND)	
FB418	1-500-445-21	FERRITE 0UH (AEP,UK)	
FB419	1-216-295-91	SHORT 0 (US,CND)	
FB419	1-500-445-21	FERRITE 0UH (AEP,UK)	
FB420	1-500-445-21	FERRITE 0UH (AEP,UK)	
		< JACK >	
J401	1-778-930-21	JACK 7P (MD CONTROL)	
		< RESISTOR >	
R421	1-216-013-00	METAL CHIP 33 5%	1/10W
R431	1-216-013-00	METAL CHIP 33 5%	1/10W
R442	1-216-049-91	RES,CHIP 1K 5%	1/10W

****

Ref. No.	Part No.	Description	Remarks
*	1-668-263-11	MD REG BOARD (US,CND) ********************	
*	1-668-263-21	MD REG BOARD (AEP,UK) ********************	
		< CAPACITOR >	
C910	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C911	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C912	1-164-232-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
CN907	1-564-505-11	PLUG, CONNECTOR 2P	
CN908	1-564-505-11	PLUG, CONNECTOR 2P	
		< DIODE >	
D906	8-719-056-83	DIODE UDZ-TE-17-6.8B	

Ref. No.	Part No.	Description	Remarks
		< TRANSISTOR >	
Q901	8-729-021-82	TRANSISTOR 2SD2396K	
		< RESISTOR >	
R902	1-216-033-00	METAL CHIP 220 5%	1/10W

****

Ref. No.	Part No.	Description	Remarks
*	1-667-046-11	PICKUP RELAY BOARD ****************	
		< CONNECTOR >	
CN702	1-565-874-31	PIN, CONNECTOR (PC BOARD) 2P	
CN703	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	
CN704	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	
CN706	1-784-213-11	CONNECTOR, FFC/FPC 14P	
CN707	1-569-309-11	SOCKET, CONNECTOR (L TYRE) 21P	

****

Ref. No.	Part No.	Description	Remarks
*	A-3293-897-A	RADIO BOARD, COMPLETE (US,CND) ******************************	
*	A-3293-899-A	RADIO BOARD, COMPLETE (AEP,UK) ******************************	
	3-018-110-01	SPRING, ANT	
		< ANTENNA >	
ANT2	1-754-003-11	ANTENNA, FERRITE-ROD (MW) (US,CND)	
ANT2	1-754-002-11	ANTENNA, FERRITE-ROD (LW/MW) (AEP,UK)	
		< CAPACITOR >	
C1	1-163-113-00	CERAMIC CHIP 68PF 5%	50V (AEP,UK)
C2	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C4	1-163-091-00	CERAMIC CHIP 8PF	50V (US,CND)
C4	1-163-220-11	CERAMIC CHIP 3PF 0.25PF	50V (AEP,UK)
C5	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C6	1-163-132-00	CERAMIC CHIP 430PF 5%	50V
C7	1-163-263-11	CERAMIC CHIP 330PF 5%	50V (AEP,UK)
C8	1-163-231-11	CERAMIC CHIP 15PF 5%	50V
C9	1-163-089-00	CERAMIC CHIP 6PF	50V
C10	1-163-093-00	CERAMIC CHIP 10PF 5%	50V (US,CND)
C10	1-163-095-00	CERAMIC CHIP 12PF 5%	50V (AEP,UK)
C11	1-162-638-11	CERAMIC CHIP 1uF	16V (AEP,UK)
C12	1-126-963-11	ELECT 4.7uF 20%	50V
C13	1-104-665-11	ELECT 100uF 20%	10V
C14	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C15	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C16	1-126-964-11	ELECT 10uF 20%	50V
C17	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C18	1-164-344-11	CERAMIC CHIP 0.068uF 10%	25V
C19	1-164-345-11	CERAMIC CHIP 0.082uF 10%	25V

RADIO

Ref. No.	Part No.	Description			Remarks
C20	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V (AEP,UK)
C20	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (US,CND)
C21	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
C22	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V (AEP,UK)
C22	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (US,CND)
C23	1-126-960-11	ELECT	1uF	20%	50V
C24	1-126-960-11	ELECT	1uF	20%	50V
C25	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C26	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C27	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP,UK)
C28	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP,UK)
C31	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C32	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C33	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C34	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C35	1-126-935-11	ELECT	470uF	20%	6.3V
C36	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C37	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C38	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C39	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C40	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (AEP,UK)
C41	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C43	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C45	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C46	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C47	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C50	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C51	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C53	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< FILTER >			
CF1	1-760-127-11	FILTER, CERAMIC (US,CND)			
CF1	1-760-468-11	FILTER, CERAMIC (AEP,UK)			
CF2	1-760-127-11	FILTER, CERAMIC (US,CND)			
CF2	1-760-468-11	FILTER, CERAMIC (AEP,UK)			
CF3	1-760-127-11	FILTER, CERAMIC (US,CND)			
CF3	1-760-468-11	FILTER, CERAMIC (AEP,UK)			
CF4	1-579-762-11	VIBRATOR, CERAMIC			
		< COMPOSITION CIRCUIT BLOCK >			
CFT1	1-233-885-11	ENCAPSULATED COMPONENT			
		< CONNECTOR >			
CN1	1-691-044-11	HOUSING, CONNECTOR 12P			
		< TRIMMER >			
CT1	1-141-459-11	CAP, TRIMMER (SEAL TYPE) 45PF (AEP,UK)			
CT2	1-141-485-11	CAP, ADJ 5PF (AEP,UK)			
CT3	1-141-410-11	CAP, ADJ 10PF			
CT4	1-141-459-11	CAP, TRIMMER (SEAL TYPE) 45PF (AEP,UK)			
CT5	1-141-410-11	CAP, ADJ 10PF			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D1	8-719-055-86	DIODE KV1470TL1-3			
D2	8-719-055-86	DIODE KV1470TL1-3			
D3	8-719-049-75	DIODE KV1520TL00			
		< FILTER >			
FL1	1-236-711-21	FILTER, BAND PASS			
		< IC >			
IC1	8-759-386-02	IC TA2008AN			
IC2	8-759-483-40	IC LC72137M-TLM			
		< COIL >			
L1	1-416-665-11	COIL, FM RF			
L2	1-416-128-11	COIL, FM OSC			
L3	1-416-507-11	COIL (AM OSC)			
		< TRANSISTOR >			
Q1	8-729-931-02	TRANSISTOR 2SC2413KQ (AEP,UK)			
Q2	8-729-920-31	TRANSISTOR DTC343TK (AEP,UK)			
Q3	8-729-931-02	TRANSISTOR 2SC2413KQ (AEP,UK)			
Q4	8-729-931-02	TRANSISTOR 2SC2413KQ (AEP,UK)			
Q6	8-729-027-46	TRANSISTOR DTC114YKA-T146			
Q7	8-729-035-63	TRANSISTOR FMG9A-T148			
Q11	8-729-039-73	TRANSISTOR FMA5A-T148 (AEP,UK)			
		< RESISTOR >			
R1	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (AEP,UK)
R2	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (AEP,UK)
R3	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (AEP,UK)
R4	1-216-809-11	METAL CHIP	100	5%	1/16W (AEP,UK)
R4	1-216-864-11	METAL CHIP	0	5%	1/16W (US,CND)
R5	1-216-097-91	RES,CHIP	100K	5%	1/10W
R6	1-216-097-91	RES,CHIP	100K	5%	1/10W
R7	1-216-073-00	METAL CHIP	10K	5%	1/10W
R8	1-216-105-91	RES,CHIP	220K	5%	1/10W
R9	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (AEP,UK)
R10	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R11	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R12	1-216-077-00	METAL CHIP	15K	5%	1/10W
R13	1-216-025-91	RES,CHIP	100	5%	1/10W
R14	1-216-017-91	RES,CHIP	47	5%	1/10W
R16	1-216-049-91	RES,CHIP	1K	5%	1/10W
R17	1-216-081-00	METAL CHIP	22K	5%	1/10W
R18	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R19	1-216-073-00	METAL CHIP	10K	5%	1/10W
R20	1-216-073-00	METAL CHIP	10K	5%	1/10W
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W
R22	1-216-073-00	METAL CHIP	10K	5%	1/10W
R23	1-216-049-91	RES,CHIP	1K	5%	1/10W (US,CND)
R23	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (AEP,UK)
R24	1-216-809-11	METAL CHIP	100	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R25	1-216-809-11	METAL CHIP	100	5%	1/16W
R26	1-216-809-11	METAL CHIP	100	5%	1/16W
R27	1-216-073-00	METAL CHIP	10K	5%	1/10W
R28	1-216-073-00	METAL CHIP	10K	5%	1/10W (AEP,UK)
R28	1-216-081-00	METAL CHIP	22K	5%	1/10W (US,CND)
R29	1-216-809-11	METAL CHIP	100	5%	1/16W
R30	1-216-075-00	METAL CHIP	12K	5%	1/10W (US,CND)
R30	1-216-069-00	METAL CHIP	6.8K	5%	1/10W (AEP,UK)
R31	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R32	1-216-047-91	RES,CHIP	820	5%	1/10W
R33	1-216-033-00	METAL CHIP	220	5%	1/10W
R34	1-216-073-00	METAL CHIP	10K	5%	1/10W
R35	1-216-073-00	METAL CHIP	10K	5%	1/10W
R38	1-216-081-00	METAL CHIP	22K	5%	1/10W (US,CND)
R39	1-216-073-00	METAL CHIP	10K	5%	1/10W
R47	1-216-093-00	METAL CHIP	68K	5%	1/10W
R48	1-216-295-91	SHORT 0			
R53	1-216-295-91	SHORT 0			
R54	1-216-013-00	METAL CHIP	33	5%	1/10W
		< VIBRATOR >			
X1	1-760-130-11	VIBRATOR, CRYSTAL (75kHz)			
**					
*	1-667-664-11	RELAY BOARD (US,CND)			
*	1-667-664-21	RELAY BOARD (AEP,UK)			
		< CONNECTOR >			
* CN410	1-580-163-11	PIN, CONNECTOR (PC BOARD) 2P			
**					
*	1-662-742-11	SW BOARD **********			
		< CONNECTOR >			
* CN619	1-580-170-11	PIN, CONNECTOR (PC BOARD) 9P			
		< PHOTO INTERUPTER >			
PH691	1-801-455-11	PHOTO REFLECTOR			
		< PLUNGER SOLENOID >			
PM691	1-454-806-11	SOLENOID, PLUNGER			
		< RESISTOR >			
R619B	1-247-822-11	RES, CARBON (SMALL) 430			
		< SWITCH >			
S693	1-762-811-11	SWITCH, LEAF (CrO2)			
S694	1-762-811-11	SWITCH, LEAF (ANTI-ERASE A)			
S695	1-762-811-11	SWITCH, LEAF (ANTI-ERASE B)			
S696	1-762-811-11	SWITCH, LEAF (HEAD POSITION)			
**					

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS **************	
6	1-505-764-11	SPEAKER (5CM)	
111	1-501-968-11	ANTENNA, TELESCOPIC	
M691	X-3374-409-1	MOTOR ASSY	
M701	1-698-999-11	MOTOR, DC	
M901	A-3320-300-A	MOTOR ASSY, TURN TABLE	
⚠T901	1-431-862-11	TRANSFORMER, POWER (US,CND)	
⚠T901	1-431-863-11	TRANSFORMER, POWER (AEP,UK)	
	1-782-663-11	WIRE (FLAT TYPE)	
**			
		ACCESSORIES & PACKING MATERIALS *******************************	
⚠	1-590-147-11	CORD, POWER (US,CND)	
⚠	1-769-412-11	CORD, POWER (AEP,UK)	
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
	1-782-706-11	CORD, CONTROL	
	3-860-694-11	MANUAL, INSTRUCTION (US,CND) (ENGLISH)	
	3-860-694-21	MANUAL, INSTRUCTION (FRENCH)	
	3-860-694-31	MANUAL, INSTRUCTION (AEP,UK)	(ENGLISH,SPANISH)
	3-860-694-41	MANUAL, INSTRUCTION (FRENCH, GERMAN)	
	3-860-694-51	MANUAL, INSTRUCTION	(DUTCH, PORTUGUESE)
	3-860-694-61	MANUAL, INSTRUCTION (SWEDISH, FINNISH)	
	3-860-694-71	MANUAL, INSTRUCTION (ITALIAN)	
	4-991-047-01	LID, BATTERY CASE	(FOR REMOTE COMMANDER)
	8-917-619-90	REMOTE COMMANDER RMT-CD7AD (AEP,UK)	
	8-917-620-90	REMOTE COMMANDER RMT-CD7A (US,CND)	
**			
		************** HARDWARE LIST **************	
#1	7-621-775-10	SCREW +B 2.6X4	
#3	7-682-548-04	SCREW +B 3X8	
#4	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#5	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#8	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Sony Corporation
Personal A&V Products Company

98C1673-1
Printed in Japan ©1998.3
Published by Quality Engineering Dept.
(Shibaura)

ZS-D7

8740

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
Tourist Model

SUPPLEMENT-1

File this supplement with the Service Manual.

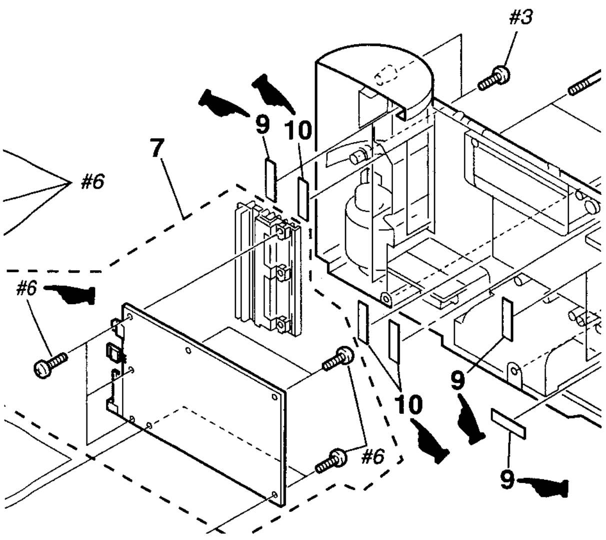
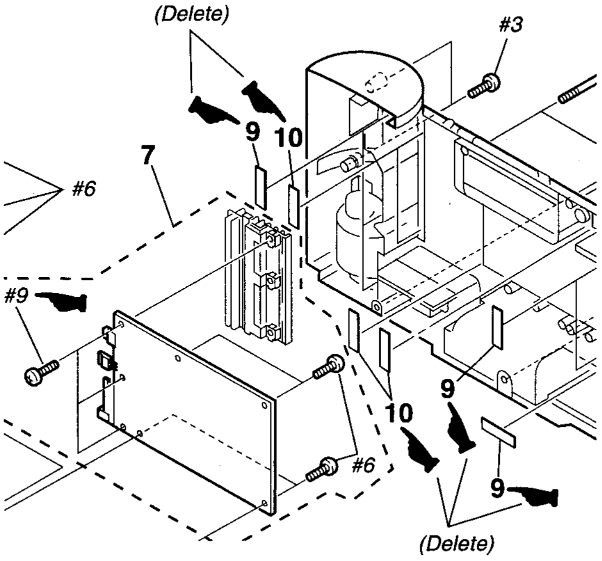
Subject : 1. Tourist model is added.
2. Correction

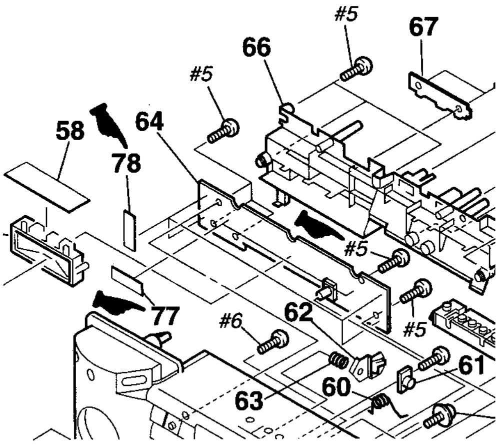
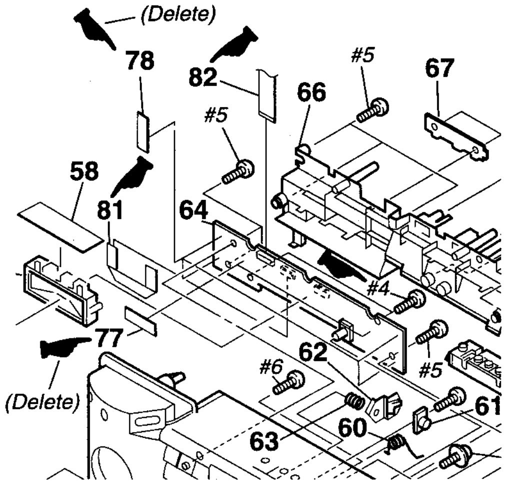
- Tourist model is almost same as UK model.
The different parts from UK model are described in this service manual.
Please refer to ZS-D7 service manual (9-923-271-11) preriously issued for other information.

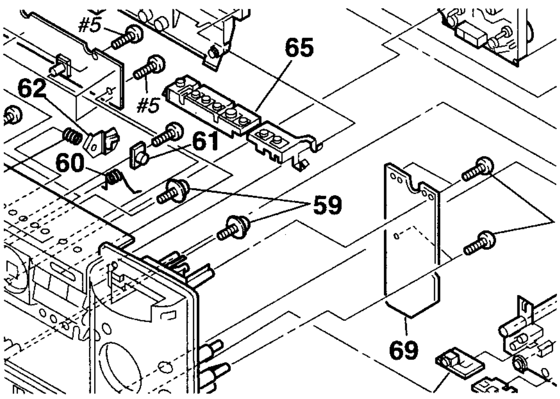
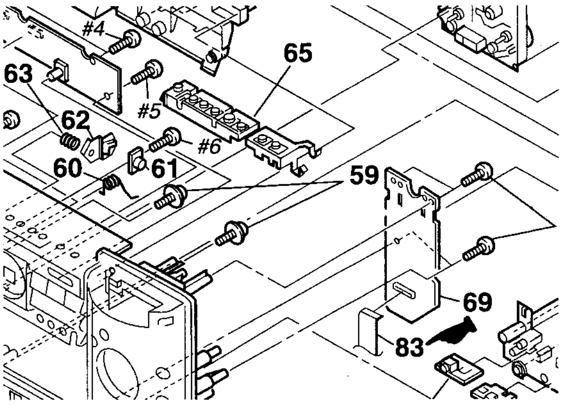
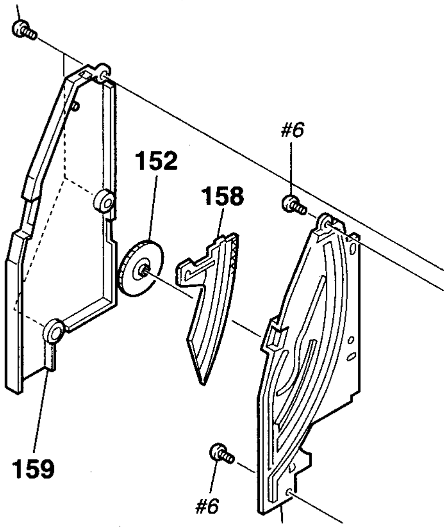
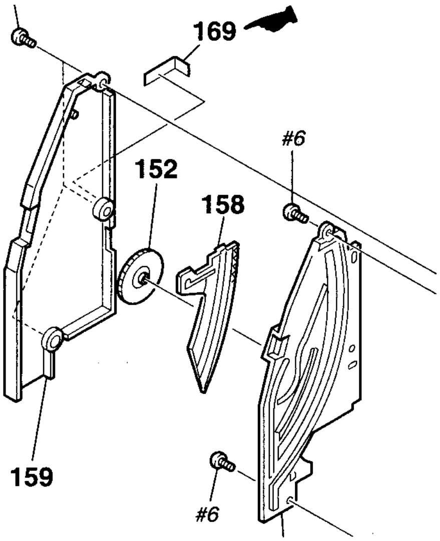
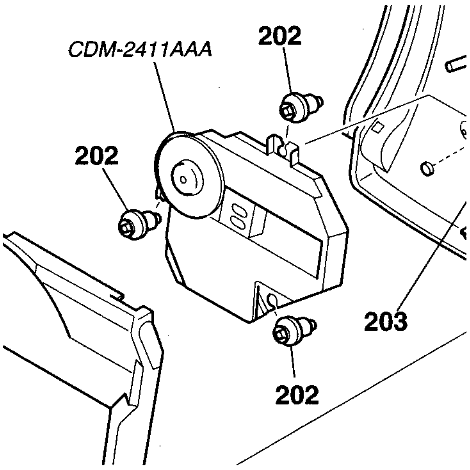
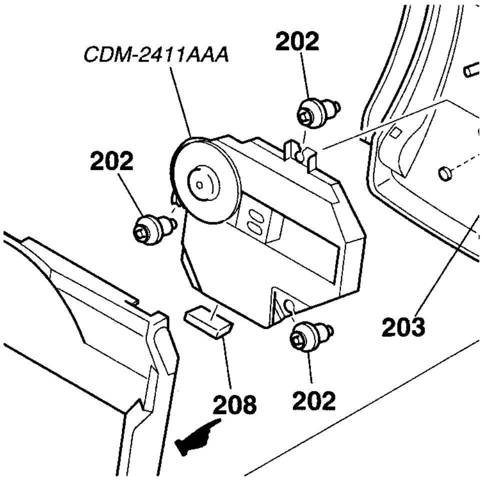
• DIFFERENT PARTS LIST

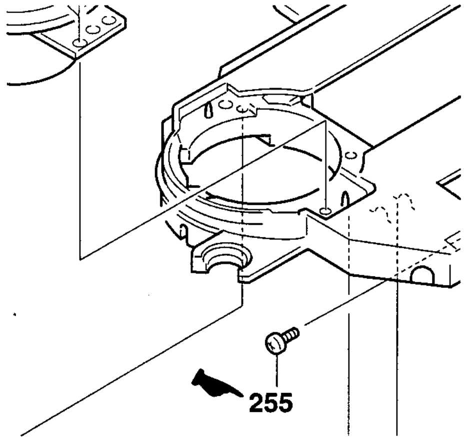
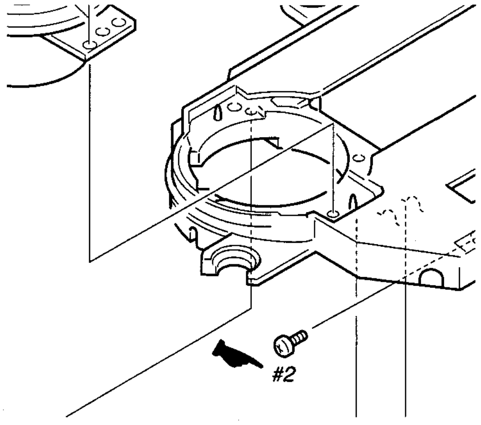
Page	UK model			Tourist model	
	Ref. No.	Part No.	Description	Part No.	Description
97		3-860-694-31	MANUAL INSTRUCTION (AEP, UK) (ENGLISH, SPANISH)	3-860-694-41	MANUAL INSTRUCTION (FRENCH, GERMAN)

☛ : indicates corrected portion.

Page	Before Change	After Change
76	 #3 9 10 7 #6 #6 9 10 #6 9 Ref. No. Part No. Description * 9 3-378-109-01 CUSHION, SARANET * 10 3-378-433-01 CUSHION, SARANET	 (Delete) #3 9 10 7 #6 #9 9 10 #6 9 (Delete) Part No. Description ——— ——— ——— ———

Page	INCORRECT	CORRECT
77	 #5 67 66 #5 58 64 78 #5 77 #6 62 #5 63 60 61 Ref. No. Part No. Description * 77 3-378-138-01 CUSHION, SARANET 78 3-378-434-01 CUSHION, SARANET 81 ——— ——— 82 ——— ———	 (Delete) 78 82 #5 67 66 #5 58 81 64 #4 77 (Delete) 62 #6 #5 63 60 61 Part No. Description ——— ——— ——— ——— 1-783-031-11 WIRE, PARALLEL (FFC) (8 CORE) 1-783-032-11 WIRE, PARALLEL (FFC) (20 CORE)

Page	INCORRECT	CORRECT
77	 #5 65 62 #5 61 60 59 69 Ref. No. Part No. Description 59 ———— ———— 83 ———— ————	 #4 63 65 #5 62 #6 60 61 59 69 83 Part No. Description 3-909-621-01 SCREW +BVTPWH 3 × 10 1-783-033-11 WIRE, PARALLEL (12 CORE)
79	 #6 152 158 159 #6 Ref. No. Part No. Description * 169 ———— ————	 169 #6 152 158 159 #6 Part No. Description 3-378-138-01 CUSHION, SARANET
80	 CDM-2411AAA 202 202 203 202 Ref. No. Part No. Description * 208 ———— ————	 CDM-2411AAA 202 202 203 208 202 Part No. Description 3-022-456-01 SPACER (VLM)

Page	INCORRECT	CORRECT
81		
82	Ref. No. Part No. Description 313 ———— ———— 320 ———— ————	Part No. Description 3-017-592-01 ARM (PINCH L) ASSY 3-017-591-01 ARM (PINCH R) ASSY
83	Ref. No. Part No. Description 372 ———— ———— 374 ———— ————	Part No. Description 3-017-596-01 FLYWHEEL (R) ASSY 3-017-595-01 FLYWHEEL (L) ASSY
97	Ref. No. Part No. Description ACCESSORIES & PACKING MATERIALS ******************************* ⚠ 1-590-147-11 CORD, POWER (US, CND) ⚠ 1-769-412-11 CORD, POWER (AEP, UK) 3-860-694-21 MANUAL INSTRUCTION (FRENCH) 3-860-694-41 MANUAL INSTRUCTION (FRENCH, GERMAN) 3-860-694-51 MANUAL INSTRUCTION (DUTCH, PORTUGUESE) 3-860-694-61 MANUAL INSTRUCTION (SWEDISH, FINNISH) 3-860-694-71 MANUAL INSTRUCTION (ITALIAN) *** ************* HADWARE LIST ************* #2 ———— ———— #6 7-685-646-79 SCREW +BVTP 3 × 8 TYPE2 N-S #7 7-685-647-79 SCREW +BVTP 3 × 10 TYPE2 N-S #8 7-685-648-79 SCREW +BVTP 3 × 12 TYPE2 N-S #9 ———— ————	Part No. Description ACCESSORIES & PACKING MATERIALS ******************************* 1-783-878-11 CORD, POWER (US, CND) 1-590-961-11 CORD, POWER (AEP, UK) 3-860-694-21 MANUAL INSTRUCTION (FRENCH) (CND) 3-860-694-41 MANUAL INSTRUCTION (FRENCH, GERMAN) (AEP) 3-860-694-51 MANUAL INSTRUCTION (DUTCH, PORTUGUESE) (AEP) 3-860-694-61 MANUAL INSTRUCTION (SWEDISH, FINNISH) (AEP) 3-860-694-71 MANUAL INSTRUCTION (ITALIAN) (AEP) *** ************* HADWARE LIST ************* 7-627-850-17 SCREW, PRECISION +P 1.4 × 2.5 TYPE3 7-685-647-79 SCREW +BVTP 3 × 10 TYPE2 N-S 7-685-548-19 SCREW +BVTP 3 × 12 7-685-646-79 SCREW +BVTP 3 × 8 TYPE2 N-S 7-685-648-79 SCREW +BVTP 3 × 12 TYPE2 N-S

Sony Corporation
Personal A&V Products Company

98J1675-
Printed in Japan ©1998.1
Published by Quality Engineering Dept.
(Shibaura)